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# THE ARCHITECTURAL RECORD

## CONTENTS


Page

**THE NEW ARCHITECTURE** ..... (Illustrated) 389
The First American Type of Real Value
A. C. David

**THE BRUSSELS EXPOSITION, 1910** ..... (Illustrated) 405
Francis S. Swales

**ARCHITECTURE OF AMERICAN COLLEGES** ..... (Illustrated) 425
VI.—Dartmouth, William s and Amherst
Montgomery Schuyler

**EVOLUTION OF ARCHITECTURAL ORNAMENT** ... (Illustrated) 443
VII.—Ornament with a Linear Basis
G. A. T. Middleton

**NOTES AND COMMENTS** ..... 455

**CITIES OF THE PRESENT** ..... 458
As Representative of a Transition Period in Urban Development
Chas. Mulford Robinson



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Photo by August Patzig.

THE MILLS & GIBB BUILDING.

4th Avenue and 22d Street, New York City. Starrett & Van Vleck, Architects.

THE ARCHITECTURAL RECORD

VOL. XXVIII. DECEMBER, 1910 No. 6.

# THE NEW ARCHITECTURE

## The First American Type of Real Value

A. C. DAVID

Photos by August Patzig

New York is a city in which many things happen, unprecedented in the history of urban humanity. No other city in the world has ever added 500,000 inhabitants to its population every three years. In no other city does such a high level of real estate values prevail over so long a strip of land as the level of prices which are being paid for lots on Fifth Avenue, from Thirtieth Street to Fiftieth Street. In no other city has anything like $200,000,000 been invested in new buildings in any one year. But unprecedented as are these and other evidences of the increases of population, wealth and business in New York, they are less remarkable to a discerning eye than a real estate and building movement which has recently been taking place on a small part of one avenue in the new mercantile district in that city. We refer to the transformation which has been made during the past two years on Fourth Avenue, between Union Square and Thirtieth Street.

The transformation which has been taking place on Fourth Avenue is not remarkable on account of the high level of real estate values which has been thereby established, because real estate on Fourth Avenue is still not worth more than a third of what it is on the best retail section of Fifth Avenue. The peculiarity of the movement on Fourth Avenue has consisted of the large number of new buildings of a single type erected in a comparatively short time. Within a distance of about a half of a mile, and during an interval of about two years, some fifteen mercantile buildings have been constructed. The largest of them covers a whole block front. The smallest of them a little less than half a block. The lowest of them is twelve stories high. The tallest of them is twenty stories high. The average for the whole group is sixteen stories. They have converted an avenue, which was formerly devoted to small retail stores and old furniture shops, into an avenue given over chiefly to mercantile business of the highest class. They will be used for the offices, the ware-rooms and the show-rooms of large manufacturing and importing firms and corporations, and they supply more floor space for such purposes than only a short time ago would have been needed during a period of ten years.

The interest of this quick transforma-

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tion for the readers of the Architectural Record does not, however, consist in the evidence it affords of the business growth of New York. It consists, rather, in the opportunity presented on the new Fourth Avenue of appraising the value and effect of the forces which are molding modern American commercial architecture. For this particular purpose, it is much more useful than any other group of buildings which are concentrated within a similarly small space in any other American city or in any other part of New York. In the first place, they are thoroughly contemporary. In the second place, they are strictly commercial. They have not been erected by people who had any money to spend or any reason for spending money on architectural "effects." In the third place, with a few exceptions, they have not been designed by the architectural firms who have been most conspicuously successful in designing other types of buildings. They have usually been issued from the offices of architects who have specialized in commercial work, and who have made their reputation by their ability to plan such structures so that the smallest profitable expenditure of money will bring the largest return in available space, in economy of operation, and in adaptation to use. In certain cases they are owned and have been built by large wholesale firms, who will occupy them as their offices, and who have no reason to advertise their business by any architectural display. In other cases they have been erected by speculative builders, who have constructed them for the purpose of filling them with tenants and then selling them to an investor, and, of course, in all such cases the opportunities for unprofitable expenditure are cut down to an absolute minimum. These Fourth Avenue buildings have been planned and designed exclusively for the purpose of being made to pay; and on this fact one must insist to the limit, because it is the salient fact concerning them, and because they are distinguished thereby from many other commercial buildings which have been erected in other parts of New York.

Other than strictly commercial reasons have, for instance, dominated the appearance of the great majority of office buildings in the financial district and of many of the new edifices recently erected on Fifth Avenue. A bank, for instance, when it builds an office building, frequently sacrifices a good deal of space and money merely for the purpose of imposing on its customers an impression of its opulent stability; and this expenditure has its justification, because a big bank, like a big life insurance company, is a financial institution. Moreover, the fact that these financial "institutions" spend money on costly materials and details, and devote rentable space to the purpose of merely creating an "effect," has an influence upon the design and the appearance of competing buildings, the owners of which have no reason connected with their own business for any similar expenditure. A certain standard of ornate decoration is established, which tenants come to demand, and which the builder is obliged to supply at any cost to himself. Similar motives have operated on Fifth Avenue to take many, apparently, commercial buildings out of the exclusively commercial architectural class. The Gorham store has been described by a good judge as the best-looking store in the world, and this judgment may be true; but, obviously, it cannot be described as a strictly commercial building. Its customers are people of wealth and refinement; and the management of the Gorham company has, consequently, a good reason for entertaining their stylish customers in a really stylish habitation. So it is with the Tiffany store, and so it is to a smaller extent with many other Fifth Avenue commercial buildings. To be sure, certain other commercial buildings have been erected on Fifth Avenue which are veritably and vulgarly commercial; but they are vulgarly commercial not because they are frankly devoted to the transaction of business, but because they are business buildings, which are making an ugly and ostentatious attempt to advertise their importance instead of a comely and a discreet attempt.

This brings us to the gist of the matter. The better Fifth Avenue buildings are either modifications of European residential styles, as in the cases of the

Photo by August Patzig.

THE FOURTH AVENUE BUILDING.

4th Avenue and 27th Street, New York City. Chas. A. Valentine, Architect.

Dodd, Mead & Co. Building.
4th Avenue and 30th Street, New York City.
Babb, Cook & Welch, Architects.

Tiffany and Gorham buildings, or they are modifications of European (French) apartment house architecture, as in the case of the Altman's store. They are buildings which are commercial in function, without any pretense of being business-like in appearance; and in this respect they are following in the footsteps of the traditional European methods. Substantially all European buildings which have been used for business purposes have been designed as modifications of urban residential styles. Europe has never had any specifically commercial architecture, and in all probability it never will have. A specifically commercial architecture has no reason for existing unless specifically commercial requirements in a building are allowed full expression. Such can never be the case in cities, which restrict the height of buildings either by ordinance or by any interpretation of rights under the common law, such as the English custom of "ancient lights." If American cities had begun by restricting the height of buildings we should never have had any specifically commercial architecture in this country. The tall building is the economical building. It renders meaningless all the architectural values upon which the traditional European street architecture has been based. Precisely and exclusively because it was allowed to shoot upwards, American commercial architecture was emancipated from paralyzing restrictions and has become a specific and original type.

103 Park Avenue.
Park Avenue and 41st Street.

dominated by novel formative and essentially real, practical requirements.

It was, of course, evident from the very beginning of the American skyscraper that some such development was taking place, although the first indications of it appeared in Chicago, rather than in New York. The earliest tall buildings erected in Chicago were dominated by practical requirements, but they were far from being complete expressions of the new American commercial architecture. In the first place, the requirements for such buildings had not at that time been fully defined and standardized, and, in the second place, the buildings were in appearance, unnecessarily uncouth and ugly. The early New York skyscrapers, on the other hand, were designed to a considerable extent independently of practical considerations. From the start the New York architects, supported by their clients, were seeking in their skyscrapers to make some kind of an irrelevant and costly architectural display; and they frequently sacrificed practical advantages and spent an unconscionable amount of money in a kind of architecture that diminished rather than increased the commercial value of the building. It was not until almost ten years later that New Yorkers began to realize that commercial buildings of a certain kind could be made more, rather than less, attractive by a loyal and intelligent attempt to make them serve an exclusively commercial purpose.

It is not our purpose to write a history of the architectural development of the American skyscraper. Many architects have contributed to the process, and it has been helped by many improvements in technical methods. If it had not been for the enterprise and adaptability of manufacturers of front brick, terra cotta, steam-heating plants, elevators and the like, the new commercial architecture would not have been possible; and the earlier architects were hampered by the lack of many materials and devices upon which both the utility and the good looks of the new commercial architecture depends. But a certain result has been reached; and what we wish to call attention to is the fact that this result is summed up better on this half a mile of

**Three of the Most Recent in the 4th Avenue Development.**

The Parker Building.
4th Avenue and 19th Street, New York City.
R. H. Robertson, Architect.

Fourth Avenue than in any other similarly small neighborhood elsewhere in New York or in the United States. New Yorkers are fully justified in talking very big about these buildings. There is no group of purely commercial structures in the world which do more to earn their living, both in use and in appearance, than does this group on Fourth Avenue. It is American commercial architecture at its best, and American commercial architecture is not only the best, but the only genuine commercial architecture in the world.

By insisting that these Fourth Avenue buildings are, on the whole, the most interesting group of commercial buildings concentrated in one spot, either in this or any other country, we do not mean that they constitute a satisfactory solution of the problem of the design of skyscrapers, or that any one of them is a beautiful and exhilarating piece of architecture. But certain qualities can be claimed for them as a group, which justify the description. They are really commercial buildings, because they have been built to pay, while, at the same time, they have by the use (for the most part) of entirely appropriate means been made measurably attractive. In the course of time the problem of meeting in the most economical manner the complex group of practical requirements, upon which the earning power of such build-

The Everett Building.
4th Avenue and 17th Street, New York City.
Starrett & Van Vleck, Architects.

ing are based, will be still more completely solved, and architects will be able to make the resulting design still more appropriate; but even if these Fourth Avenue buildings are still far from completely representing the full development of their type, they assuredly point in the direction which will lead to the ultimate attainment of the goal.

The mercantile buildings erected on Fourth Avenue differ from the great majority of office buildings, in that the rents which can be charged for space therein are smaller than the rents which can be charged in structures used exclusively for office purposes. In the latter several dollars a square foot can frequently be obtained. In the former,

Photo by August Patzig.

THE COOPER HEWITT BUILDING.

4th Avenue and 28th Street, New York City. Clinton & Russell, Architects.

sixty or seventy cents a square foot is usually the limit. Of course, the difference in the value of the land on which the two types of buildings are erected will account for a large part of the difference in rent. Nevertheless, the architect of a loft building is forced into rigorous economies which the architect of an office building can sometimes escape. An additional expenditure of $50,000, which would constitute a small portion of the cost of the office building, would constitute a much larger proportion of the cost of a mercantile building. The expense of the latter must be kept down to somewhere between twenty and twenty-three cents a cubic foot, while, at the same time, the standard of construction, at least in the case of buildings seeking the better class of mercantile tenants, must be very high.

The practical conditions which these buildings are required to meet may be grouped under five heads: (1) those following from the necessity of obtaining a maximum amount of clear and available floor space, (2) those resulting from the exactions of the insurance companies, (3) those resulting from the building laws, and (4) those resulting from the necessity of economical operation. Finally, speculative builders have discovered it advisable to pay some attention to design, because, other things being equal, a structure which presents a good appearance sells better than one which does not.

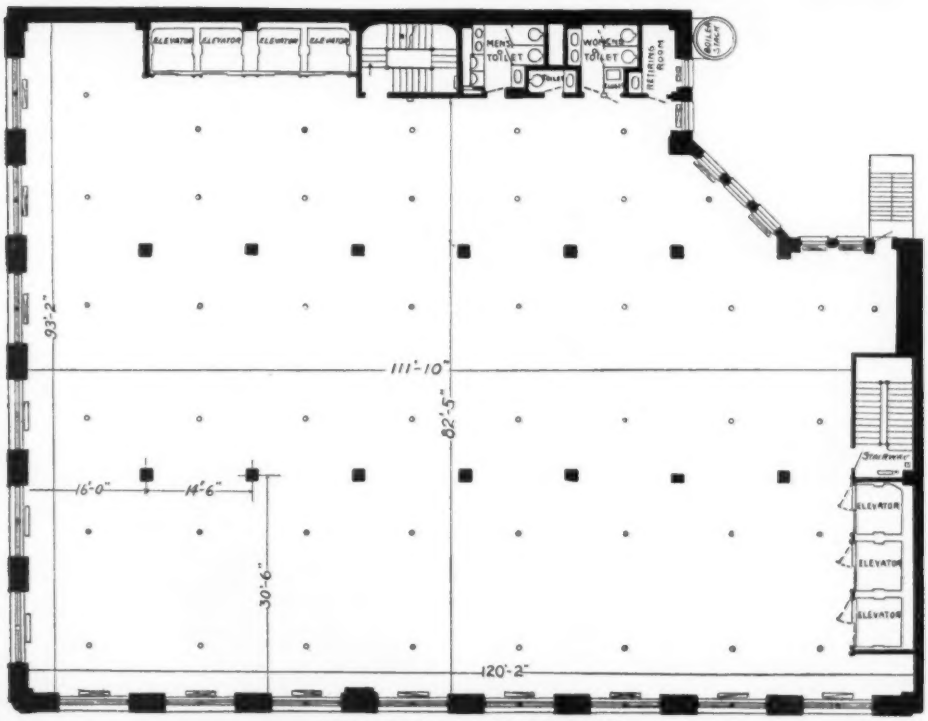
Of course, the prime object is to secure the maximum floor space, made properly available by accessibility, the absence of impediments, abundant light and proper distribution. In large lofts, containing 10,000 or more square feet there may be large numbers of employees, engaged in various kinds of work, all of whom have to be overlooked by a floor manager. The ideal loft, consequently, is square in outline; and anything like an L-shaped plot is usually avoided. Among the new Fourth Avenue buildings all except one are built on square or rectangular lots. Starting with a square lot, the great effort of the architect must be to secure the largest possible amount of light for the different floors, because on such a supply of light the maximum availability of the floor space will depend. The amount of light which he can get will, of course, depend upon the number of directions from which good light can be secured; and the consequence is that the control of a corner is of the greatest practical importance in designing an ideal loft. With that advantage more or less light can be secured for three sides of a floor; and the amount will be more, rather than less, when one side fronts on an exceptionally wide thoroughfare, like Fourth Avenue. As a matter of fact, all but two of the important buildings recently erected on this avenue are built upon one or more corners. Usually the space obtained on any single floor is thrown into one large loft; but sometimes such is not the case. In planning the use of his floor space, the architect is obliged to consider the possibility of subsequent subdivision.

The height, no matter how many directions from which it is obtained, is, of course, made available by windows. The great object of the plan is to obtain the maximum area of exterior openings; and these windows must be arranged, if possible, so as to make every square foot of floor space available without the use of artificial illumination. The consequence is that large mullioned windows are used, so as to fill the entire space between the piers with glass. Until recently the height of the windows was determined by the height of the steam radiators from the floor; but more recently the architect has been able to lower his window sills by using a system of indirect steam radiators, which flattened out the space needed for the heating arrangement. The net result has been to leave practically only the pier and the floor lines solid on the exterior, all the rest of the façades being thrown into window space. The dominant consideration of a maximum amount of light has also tended to increase the height of the ceilings to the very limit of economy, because of the aid rendered thereby not only to the lighting, but to the ventilating system. The arrangements for ventilation are very carefully planned and insure good air in all kinds of weather.

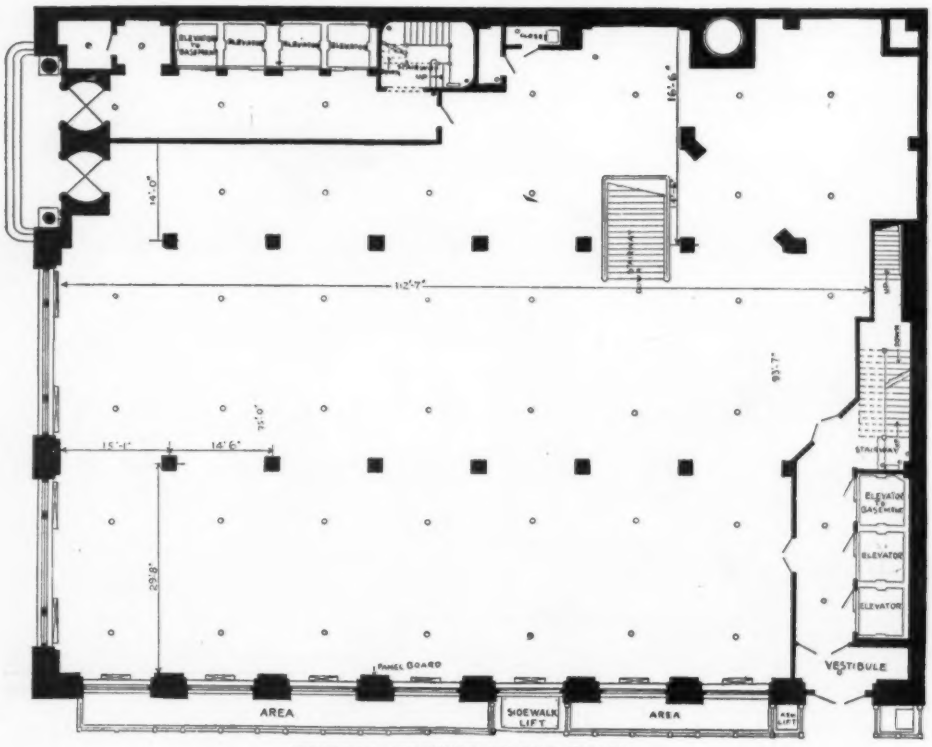
Photo by August Patzig.

THE MILLS & GIBB BUILDING.

4th Avenue and 22d Street, New York City. Starrett & Van Vleck, Architects.




TYPICAL UPPER FLOOR PLAN.




TYPICAL GROUND FLOOR PLAN.

Of course, the amount of clear and available floor space is affected by many factors besides the amount of light. The interior columns must be arranged along the fewest possible number of lines, and the various conveniences and services connected with the building must be planned so as to supply an adequate service, without diminishing any more than necessary the rentable floor space. The planning of these services is, perhaps, the most difficult part of the architect's job, because the chance of economy varies with the class of tenants for which the building is prepared, the size of the lot and its shape. The number of elevators needed, for instance, will vary according to the use to which the lofts are put. Two elevators have been considered enough for a building 100x100, but of late years such a limitation of the elevator service has been found dangerous. If the floors are used for manufacturing purposes or are subdivided into offices, the number of employees increases; and as they usually arrive and are dismissed at about the same hour, the elevator service has to be proportioned to the exigencies of emptying the building, if necessary, within a few minutes. A large area has to be devoted, also, to the freight elevators. They have to be provided with a separate entrance, which is situated, if possible, on the side street, where trucks may have less difficulty in unloading and loading. Another difficult matter to arrange economically is the toilet accommodations. Two toilest have to be provided on every floor, one for each sex; and in case the building is used for manufacturing purposes, the factory law requires the furnishing of additional toilets elsewhere in the building.

Second only in importance to the planning of a maximum amount of clear and available floor space is the satisfaction of the exactions of the Board of Fire Underwriters, so that the tenants may obtain the lowest possible rate of insurance. The standard of fireproof construction is thus pretty well fixed, but it tends constantly to become higher on grounds, not only of fire protection, but because of the resulting economies of maintenance. The tenants in such buildings carry large amounts of stock, much larger than the tenants of an office building, and the saving for them is very considerable, in case the building measures up to the highest standard of fire-proofing. Some of the best of Fourth Avenue buildings are models of substantial, safe, economical and at the same time quick construction. In a number of them granolithic or concrete floors have been used. Metal trim of a very simple stock design and painted to represent wood has become almost universal. Ornamental designs are avoided in the plastering, and the plaster corners are protected by metal beading. Speed of construction and necessary quickness of occupancy makes it necessary to standardize all details, and to omit as much paint as possible. Of course, an automatic sprinkler system and full local fire protection have to be provided for every floor.

Floor loads, stairways, fire-escapes and the like are all designed so as to conform to the requirements of the local building law. The steel frame has to be of sufficient strength to carry a live load of one hundred and twenty-five pounds to the square foot. A substantial saving can sometimes be brought about by full co-operation between architect and engineer in the design of the frame-work. An economy usually results from combining the stairway and fire-escape provisions of the law. Two stairs are demanded for each 5,000 square feet of space; and in buildings of larger area, the exterior fire-escape, which is also demanded is converted into an outside stairway.

Changes of considerable importance have recently been made in the equipment of these loft buildings. Until recently it was almost the universal custom to install a heating, lighting and power plant in buildings of this character, because the policy of the public utility companies made such private installations profitable. Now, however, contracts can be made to obtain the power from the street, which makes it more economical to buy it; and the consequence is that such plants are now generally omitted. Space is still left for them so that they can be installed at

some future time, in case the economical operation of the building should demand it; but the day will probably come when a cheap supply of power from a central plant will be so well assured that such a

The Brogan Building.
4th Avenue and 20th Street, New York City.
Neville & Bagge, Architects.

space will no longer have to be reserved. When this time does come, it will be possible to effect additional economies in interior arrangement.

The foregoing are some of the essential practical requirements, which have to be met by the architects in the design of these buildings, and when they are all met he is not left very much discretion in adapting his interior arrangements to a pleasant exterior effect. The exterior consists of a frame work, usually about sixteen stories high of piers and floors, the lines of both of which are separated by fixed distances, and both of which cannot be disguised by much ornamentation. The use of large detail is forbidden both by the expense and by the knowledge that no detail can be scaled large enough to count effectively at such a great height from the street. There is only one architectural device of importance which they are permitted to use at the expense of practical availability of the building. They have been permitted to place cornices on some of the buildings whose projection is sufficient to hurt the light on the top floor. The consequence has been that the top floor is often used in part for the janitor's quarters, for store-rooms, or for extra toilets, whenever they are needed.

At the same time it must not be inferred that the architect, even if he would, could ignore aesthetic considerations. A certain standard of architectural decency tends to be imposed even on speculative builders. They find that a building which has been made measurably attractive in appearance at some moderate cost will sell better than a building in which such considerations have either been ignored or have been met by clumsy and vulgar methods; and the means whereby some measure of architectural attractiveness can be obtained within the necessary limits of expenditure are now pretty well settled by common consent. Thus the appearance of these buildings, like every other aspect of them, tends to become standardized.

In the effort to render a sixteen-story building attractive at a minimum of expense, the architect has to depend upon a few simple and obvious devices. He can in the first place group his window openings to some slight extent and by these means he can emphasize the corners of the building and give them a certain solidity. In many cases this device has not been used, but in those

Photo by August Patzig.

THE THREE THIRTY-FOUR FOURTH AVENUE BUILDING.

4th Avenue and 25th Street, New York City. Geo. B. Post & Sons, Architects.

buildings, such, for instance, as the Braender Building on the southeast corner of 24th St., whose architects have used it, the effect is excellent. In no other way can a structure of this kind be made to look like a tower rather than a cage, and the cost of the arrangement is practically negligible. It gives the

The Ashland Building.
4th Avenue and 24th Street, New York City.
Wm. C. Frohne, Architect.

building a salient line and direction, from which it can derive some propriety and dignity of appearance.

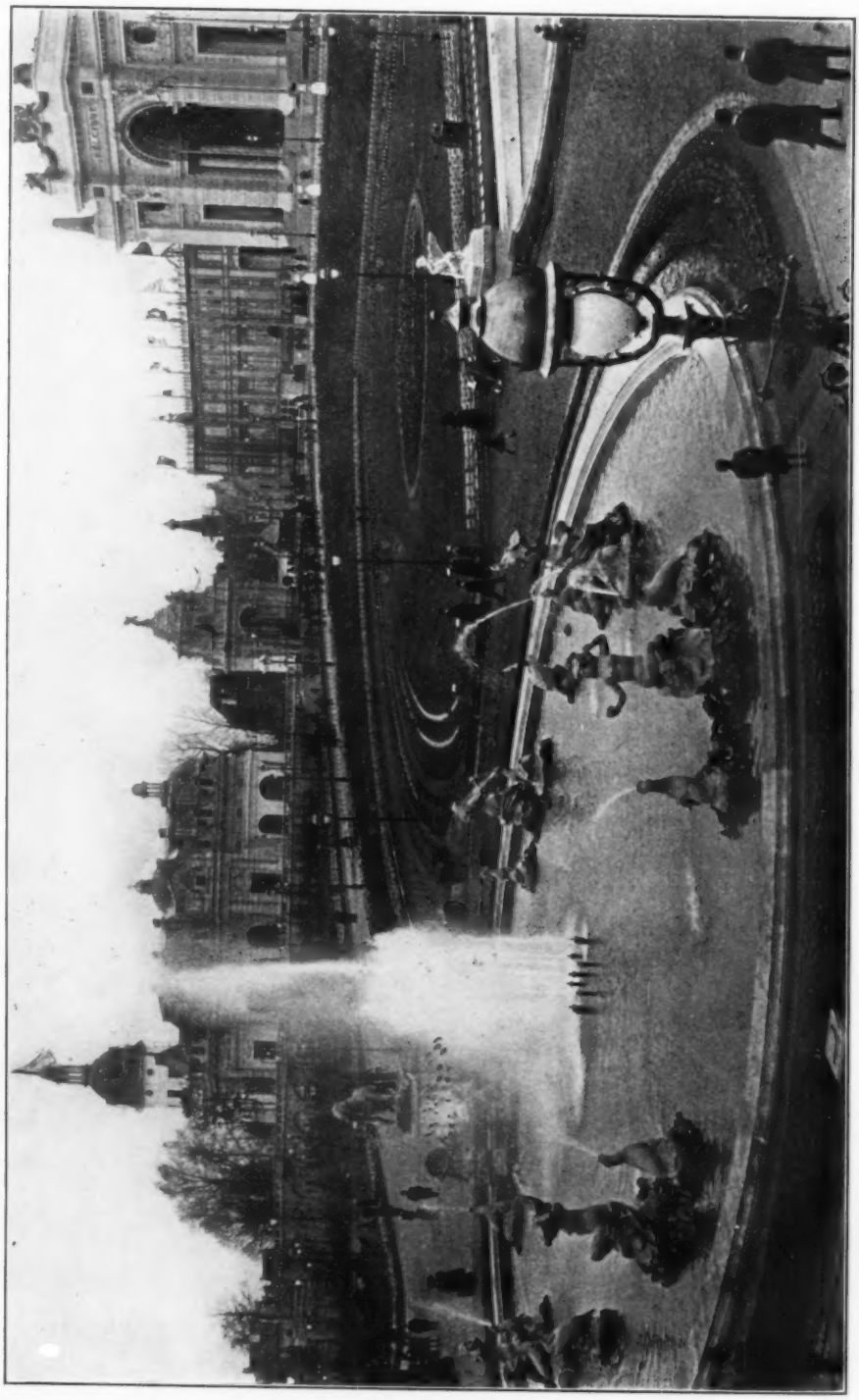
A tall loft building can do without emphatic lines, but it cannot do without some attractiveness of coloring. The great effort of the architects has been to obtain a good-looking material for the main shaft of the edifice, and in this effort they have been enormously helped by the advances recently made in the manufacture of front brick and glazed terra cotta. In one or two cases stone has been used, and with admirable results, but the cost of stone is usually prohibitive. An architect can now choose between many varieties of brick and terra cotta, all of which give the building a pleasant color and surface, and all of which are susceptible within limits of decorative treatment. It is particularly in this respect that the Fourth Avenue buildings exhibit a considerable average advance over any similar group of their predecessors. A better colored brick or terra cotta has usually been specified; and the material has been treated with discretion and good taste. In some cases decorated patterns have been obtained in the laying up of the brick itself. In other cases white glazed terra cotta decorated with superficial ornamental patterns has been effectively employed. In still other cases a brick building has been trimmed with colored and glazed terra cotta. The variations on the central idea are numerous and ingenious and permit the display of a high degree of aptitude for purely decorative design. What is needed and sought is essentially an attractive and effective arrangement of color and pattern. And in seeking these appropriate and economical means of ornamentation, the architects have abandoned an error, which was very prevalent until recently even among the designers of strictly commercial buildings —the error of overloading the top stories of a sixteen-story edifice with masses of ugly and bloated terra cotta detail in high relief. Ornamentation of this kind was ineffective from the street, and from the upper windows of an adjacent building it was frankly hideous.

We trust that readers unfamiliar with conditions in New York will now be able to appreciate the importance of this group of mercantile buildings as representing a significant and prominent architectural type. The dominant idea to keep in mind in respect to them is that they are from every point of view essentially a normal and natural growth. In almost all other departments of Ameri-

can architectural design the process of improvement has depended on the somewhat forcible imposition on the American public of European technical standards and traditional forms. But in respect to these commercial buildings this usual source of architectural amelioration has availed nothing. Indeed whenever the attempt has been made to impose these standards and forms on commercial buildings the result has been perverting and in some instances corrupting. Neither has very much progress been made by means of a rigorous application of merely logical ideas. The advance has come about by way of a candid and unpretentious attempt to design buildings, which satisfied every real practical need at the lowest possible cost. The result of this attempt up to date is a group of buildings which really earn their living, and they do so without either any subservience to tradition or any revolutionary departure from it. They are absolutely a case of the survival of the fittest—the fittest, that is, under existing conditions. The conditions will change both aesthetically and practically, but any future advance of American commercial architecture will depend upon a further development of the ideas and the methods which have made these Fourth Avenue buildings what they are.

Photo by August Patzig.

4TH AVENUE, LOOKING NORTH, BEFORE THE RECENT DEVELOPMENT.



THE BRUSSELS EXPOSITION, 1910—THE FOUNTAIN AND MAIN BUILDING.

Brussels, Belgium.

FIG. 1. THE BRUSSELS EXPOSITION, 1910—THE MAIN HALLS OF BELGIUM. Brussels, Belgium.

# THE BRUSSELS EXPOSITION, 1910

FRANCIS S. SWALES

Every great exposition is, from the architect's point of view, a disappointment. Not because it does not present opportunities for the display of architectural abilities—artistic as well as scientific—but because the opportunities are neither so many nor so great as they seem to be as one thinks of the exhibition, as the advertisements describe it, in terms of so many "hundred acres covered." Vast acres are so often confounded with vast artistic possibilities when mentioned in connection with an exposition that it has become a popular belief that the "bigger the show" the more beautiful is the mere corollary.

It is one of the evidences of a real appreciation of architecture on the part of the intelligent public that every exposition promoter recognizes the necessity of commencing his enterprise by obtaining the best architectural "picture" possible, in order to arouse public interest in his scheme. It is a further evidence of the same appreciation that he recognizes also that the work of one architect, however brilliant a designer he may be, will not suffice for all of the buildings—that there must be a "variety," as well as attractiveness to the scheme as a whole.

The architectural "picture" accomplished—and it may be insisted that this is always the *clou* of the exposition, because, however good the exhibits themselves, and however well arranged, and however much they may be the matter of importance to bring to the attention of the public, they are *not* the attraction to visitors. It is the effect of the ensemble—the buildings, terraces, gardens, fountains, lighting and general gaiety of the grounds—in a word, the "picture" which draws the crowd. This accomplished, and attendance taken for granted, the next problem is to make the visitors spend their money. For this purpose, large spaces must be given up to restaurants and the "shows," "attractions"—or "distractions"—which afford



Brussels, Belgium.

Fig. 2. The Brussels Exposition, 1910—The Gardens in Front of the Kermesse.

animal sensation or pleasure to the less intelligent and the younger visitors. It is upon the probable income from the restaurant and amusement sections that the exhibition promoter must reckon his possible profits—if any are to be obtained directly from the exhibition as a business enterprise—as the returns from the spaces let to exhibitors, in certain sections, seldom can be made more than enough to pay the net cost of the buildings in which they are housed, while other sections, such as the fine arts and education, must afford free space; and the cost of the buildings required to house the exhibits in such sections must be charged to the general account, which the gate receipts are supposed to balance.

It follows, then, that the more space given up to exhibits which give no direct financial return (bearing in mind that, whatever he may know in advance of the final outcome of his figuring, the promoter must always show his enterprise to be financially sound!), the more the architectural cloth must be stretched in order to make the coat big enough to cover the exhibition's carcass. It is because of this necessity—which always arises—that the larger the exhibition the greater the chance of it proving a disappointment as a whole, because of some severe anti-climax to a brave beginning. Exhibitions affording free space without a strict limitation of its total extent naturally suffer the most, as the greatest demands for space come from those who do not pay, and hence are least careful of how much they require; and it has been almost invariably the case that the extension of the scheme beyond the originally planned limits has caused serious artistic shortcomings and often large financial loss.

The increase in size of an exhibition may be made in one of two ways: by enlarging the buildings without extending the grounds, thereby reducing the open spaces; or by increasing the ground area and erecting supplementary buildings. But whichever method is adopted it is certain that these extra spaces must be covered as cheaply as circumstances will permit. If the extensions can be placed behind the original buildings, in such positions as not to require any façade treatment, the best method has been found; if new buildings requiring some form of architectural front must be built the expense is likely to cause the omission of some necessary ornamental feature of the general scheme; but the most undesirable form an extension can take is that it necessitates the enlarging of the buildings, in such a way as to change the lines of frontage, destroy circulation and damage the scheme not at some point alone, but as a whole.

At the St. Louis Exposition of 1903 the vast size to which every department grew made it necessary to alter the purpose of certain buildings (so that ornament, originally appropriate, lost its significance—sculpture relating to weaving, textiles, etc., became adornments to the Education Palace; features like the "Closure," designed by Mr. Walker as an entrance and end to the main court, and the high towers to the buildings by Messrs. Carrère & Hastings and Van Brunt and Howe had to be omitted altogether, and Mr. Cass Gilbert's original

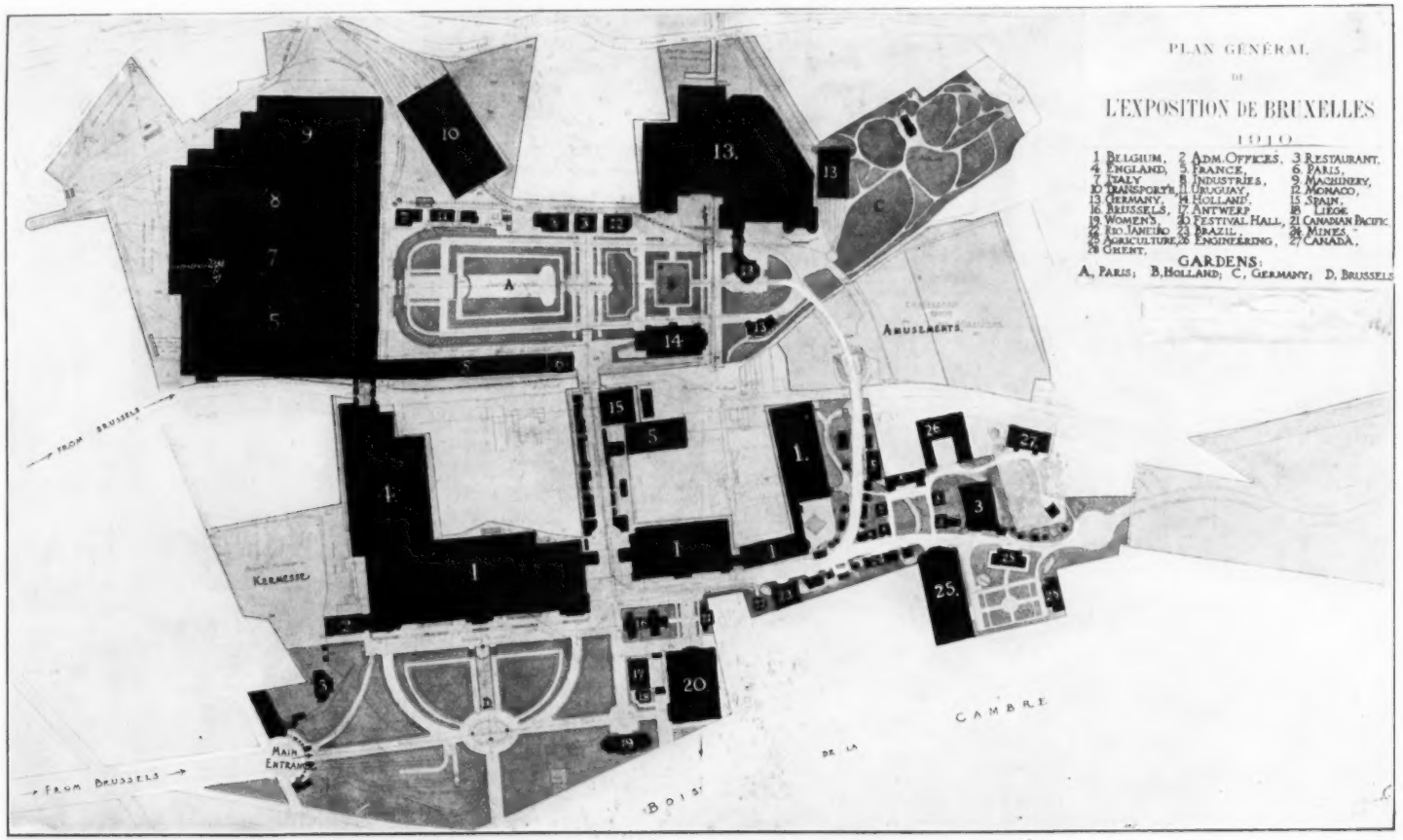



FIG. 3. THE BRUSSELS EXPOSITION, 1910—GENERAL PLAN OF THE GROUNDS.

Brussels, Belgium.

design for the Art Building, following the curve of the hillcrest, had to be completely changed—at the expense of a permanent loss to the city of St. Louis—in order that the exhibition, in extent, might be the "greatest on earth"; and had a less gifted architect than Mr. Masqueray been charged with the design of the buildings erected on the tract beyond the Skinker Road they could hardly have become otherwise than huge dismal barns, so inadequate were the a "back" was adopted; and enough space was provided at the rear to enable extensions to be made quickly and cheaply.

The Brussels Exposition of 1910 could not be extended over extra territory as at St. Louis, nor upon extra space provided in contemplation of possible changes and extension as at London. It is built upon a site or conglomeration of sites, irregular in plan, elevation and section. It is built on a hill, a plateau, a low plain, partly surrounded by a kind

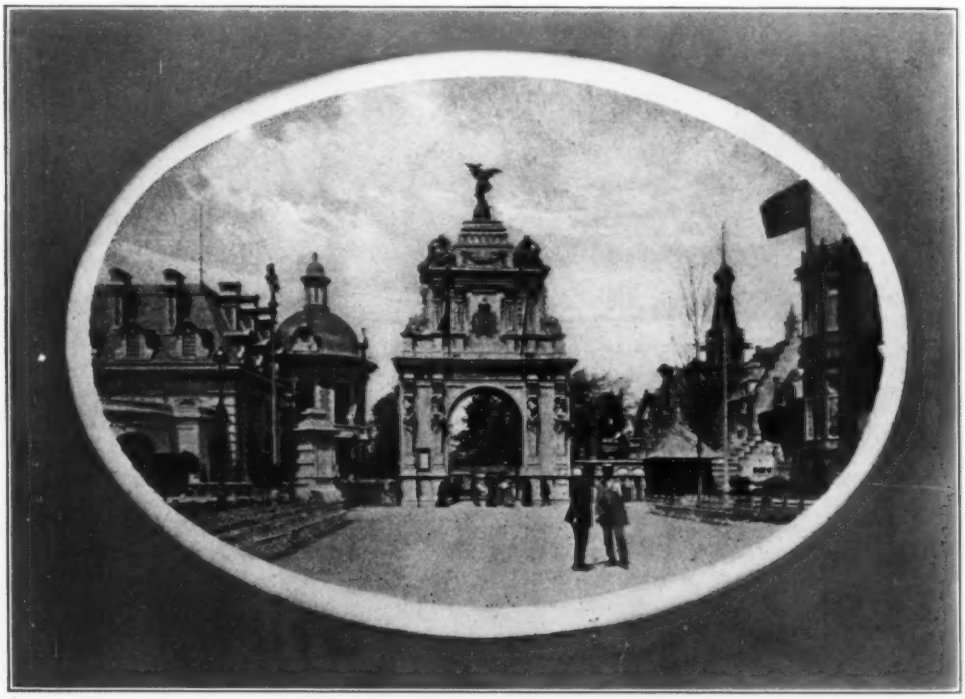


FIG. 4. THE BRUSSELS EXPOSITION, 1910—ENTRANCE TO THE BRUSSELS KERMESSE.

funds remaining for the big buildings which had to be added to the scheme.

At the Franco-British Exhibition, London, 1907, the central tower—the dominating feature of the composition—had to be discontinued after work had actually begun, and throughout the season the gaunt steelwork was only partly concealed by some irrelevant canvas scenery. Several other buildings had to remain unfinished until the gate receipts permitted further expense upon them. At this exhibition the wise expedient of planning the buildings so that each had of dyke and across three bridges over important streets leading to suburban towns. Within its outer limits are sites filled with jerry builders' houses, which it hems in on all sides; and it is itself hemmed in on all sides—as it lies just beyond a newly built district in Ixelles, and just within another similar district farther from Brussels. On one side it is bounded by the Bois de la Cambre, and on the other by the Ixelles Cemetery. It is upon an impossible site for a regular, conventional composition—and the constitution of exhibition plan-

ning is a formal *parti*—if that composition should require any change. It was not the intention of the promoters, nor executive committee, that any changes were entirely omitted from its scope, or organized under a separate administration, having only a nominal connection with the main exhibition—as, for ex-

FIG. 5. THE BRUSSELS EXPOSITION, 1910—THE BRUSSELS PAVILION.
H. Van Neck, Architect.

or extensions should take place; practically no free space was provided, and several of the sections which figured largely in other international exhibitions ample, the "Fine Arts Exposition" being held at the renovated old buildings of the Cinquantenaire Exposition, about two miles from the site of the exposi-

tion; or the "Colonial Exposition," which is "on" at Tervueren, a town some half-hour's journey by railway from Brussels. The exposition proper is confined practically to manufactures, industries and agriculture. The plan made in the first place was proceeded with at once, and no thought of change was entertained until the British commissioners decided that, in place of her usual building of moderate size and excellent design and craftsmanship, Britain must

Fig. 6. The Brussels Exposition, 1910—La Maison de Rubens—Antwerp Pavilion.

have "as much *space* as Germany," and the position of honor between the main halls of Belgium and France. Up to this point the plan made by the architect-in-chief, Monsieur Ernest Acker, was dignified and interesting. He had arranged his principal halls in a straight line, and the axis of the *Grande Terrasse* parallel with the façades extended from the entrance to the *Kermesse* to a point twelve hundred feet distant where the road divided, bearing off to the left in the form of a semi-ellipse to a point in front of the German buildings, where it joined the long axis of the *"Jardin d'Ixelles"* (since changed to the *"Jardin de la Ville de Paris"*), and to the right, following an irregular natural course down the hills to the low level of the *Plaine des Sports*. The cross-circulation was as it has been executed. The change required by the demands of the British commissioners made it necessary to advance the front of the principal Belgian hall some thirty-five feet, which eliminated the axis of terrace and main road and shut out the view of the other Belgian halls from the Grand Terrace and the Garden of Brussels.

It also made it necessary to advance the Grand Terrace so that its front line, seen from the roads leading from the main entrance, cut diagonally across the façade of the principal building (Fig. 1), and caused, besides, another defect of making more steep the incline of the roads leading from the main entrance to the terrace. The changes wrought a radical effect upon the plan: the single opportunity for a grand vista was lost; and in the place of a well-sustained circulation, the lack of direction—the *axis*—to the principal road makes it actually insignificant. Nine out of ten visitors either make a turn round the pavilion of the *Ville de Bruxelles* or pass directly through the unimportant Avenue of Concessions to the terrace overlooking the garden of the *Ville de Paris*, which lies some twenty feet below the level of the terrace; here the crowd divides, part turning into the Dutch pavilion and part following the terrace back to the industrial halls, in which are placed most of the French and Italian government sections. But the crowd does not circulate freely; when the attendance is large the Avenue of Concessions, the "Terrace of Industry," and the vicinity of the Brussels Pavilion become stopped by the density of the crowd, which seems never to know in what direction to turn. One feels that there is no plan; that it is mere agglomeration of groups of buildings and gardens, more or less connected together with roads which should be provided with finger-posts to assist one in finding his way about. It is a great disappoint-

ment that this should be the case in such an important undertaking as a first-class international exposition (as this one of Brussels unquestionably is), and, especially so, as one remarks that the difficulties which have arisen were skillfully avoided in the original plan.

There are two other points in which the scheme, as it had to be worked out, might have been improved: First, the ground lying between the pavilions of the Canadian Pacific Railway Company and of Brazil should have been purchased, even at an exorbitant price—to provide a suitable site for the *Salle des Fetes*, and in order that the site actually occupied by it could have been used for the numerous kiosks—advertising soap, gin, beer, beef-extracts and cigars, which have been crowded, side by side, and permitted to be covered with large unsightly signs, into that part of the principal garden lying between the semi-circular road and the pavilions of the cities of Brussels, Antwerp and Liège and the Palace of Women's Work. Second, the Terrace of Commerce, on which stand the Italian and Uruguayan pavilions, should have been extended as far as the site occupied by the Monaco Building, in order that some high focal point might be placed opposite the end of the Avenue of Concessions. The breaks in the continuity of the lines of buildings caused in the first instance by a small house and grounds jutting upon a principal roadway, and in the second by the drop in level of the ground so that one looks down upon the roofs of two or three pavilions which should have been placed high enough to balance the effect of the French Gallery, when viewed from the axis of the gardens of Holland and of the *Ville de Paris*.

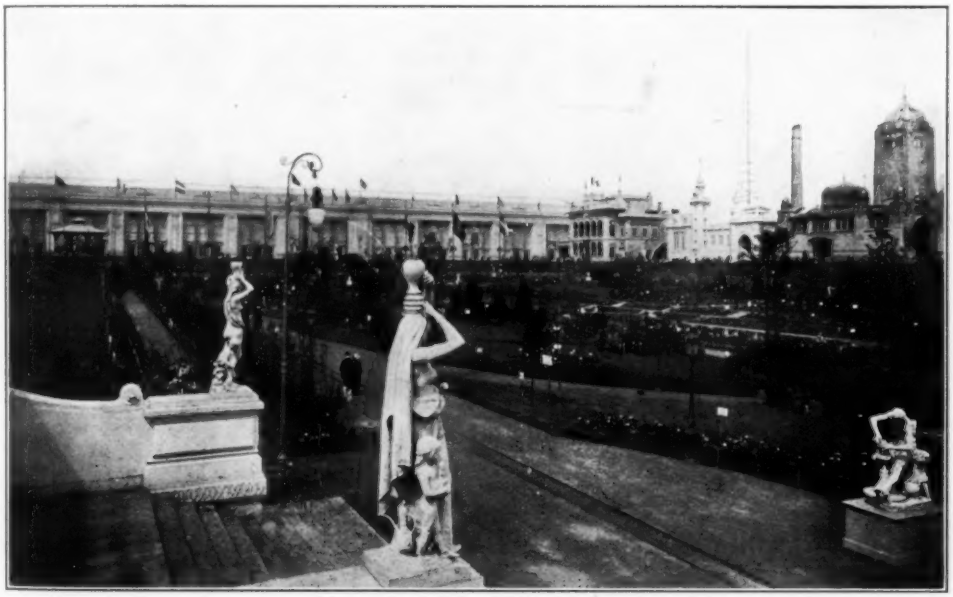


FIG. 7. THE BRUSSELS EXPOSITION, 1910—THE FRENCH GARDEN.
M. Jules Vacherot, Garden Architect.

As to the buildings and gardens, they have at least the merit of variety—which is essential in an informal scheme. The two great groups of exhibition halls (Figs. 1 and 7), designed by Mr. Acker, are in a free classic style; rich—not without refinement—dignified and happy. They are large in scale, good in color—which has been freely applied, with architectural and sculptured details which ornament as well as adorn. They are designed as though intended as mere

"studies" for permanent buildings to be erected in stone, marble, bronze, iron, etc., and no effort has been made to treat the façades as being of the material actually employed. From the æsthetic point of view they are open to criticism —perhaps condemnation—on that account; but from the decorative or hedonistic standpoints they are successful buildings for the purpose. A point to criticise in the composition of the façade of the Belgian Hall is that the central feature possesses less "void" and more "solids" than the end pavilions, and is, in effect, consequently, stronger and less inviting. It is not sufficiently larger than the end pavilions to be a dominating one, and might have been better had it been reduced to a mere accent to the center of the running *motif* between the end features. The center of the industrial halls (Fig. 7), overlooking the *Jardin de la Ville de Paris,* is not sufficiently accented to enable the eye to locate it easily.

Next in importance of effect, due largely to their commanding positions at either end of the Grand Terrace, come the Brussels Pavilion and the buildings comprised in the *Bruxelles-Kermesse.* The former (Fig. 5) is a wonderfully rich and festive structure in imitation of stone—jointing and weather stains having been faithfully painted upon the plaster to make the illusion as complete as possible; and even the "carving" is gilded "to preserve it against the weather"—after the manner of the architects of the late Flemish Renaissance period.

In the *Grand Place* of Brussels, which Victor Hugo proclaimed to be the finest market square in the world, are several well-known buildings in the same gorgeous style; and in the *Rue de Flandre,* not far from the Bourse, is another building, which was designed in 1697 by the architect-sculptor Cosyns (who was also the architect of the *Maison des Boulangers,* which forms the angle of the *Grand Place* and the *Rue au Buerre,* and of which the façade is one of the most rich and beautiful in the *Place*), and erected for a Brussels magistrate.

This building in the *Rue de Flandre* is almost entirely hidden by later structures which have been built around it. Due to its position, few people know that it was at one time, perhaps, the finest house in Brussels, and very few visitors know of its existence, as it is not mentioned in the guide books nor shown upon the plans provided for the use of sightseers. However, it is upon this old house that Monsieur P. Van Neck, architect of the Brussels Pavilion, has based his design, or "reconstitution," as he has himself described it. The pavilion may be regarded as a "restoration," similar to those which the *Prix de Rome* architects prepare of ancient cities and buildings in Greece, Rome and their colonies; that is to say, it is "restored" with plenty of imagination. It is probably similar to what the building originally was, except that the old house did not have the tower; but the old church of St. Catherine *did,* and it—the old tower of the former church—is still standing, encased in an elaborate scaffolding through which one may obtain some slight idea of its general form. The combination of the old house with the old church tower makes an effective and thoroughly representative example of the *Bruxellois'* taste in architecture. The entrance to the *Kermesse* is in the same style (Fig. 4), though the principal building (Fig. 2) within the limits of the *Kermesse* is more French in design. In detail it follows the work of the period of Henri IV. and Louis XIII. of France. Many of the small buildings in this interesting "attraction" are excellent studies in the various characteristic styles of architecture of ancient Brussels.

It would require several views to give any idea of the extreme sumptuousness of the Brussels pavilion, which, in its way, is a *tour de force.* It contains a fine painted room, which is its principal attraction, internally.

In the longitudinal road called the Avenue of Concessions, and almost adjoining the Brussels Pavilion, is another typical example of the florid Flemish Renaissance and another "restoration" or "reconstitution"; it is the pavilion of the city of Antwerp, and is believed to be a replica of the house of the painter Rubens. It is a work which demanded,

upon the part of the restorer, artistic intuition and special scientific information, because the documents in existence relative to Rubens' house are not as exact and upon views shown by two copperplate engravings by Jacques Harrewijn, made from drawings by J. Van Croes in 1684 (the house itself was constructed

FIG. 8. THE BRUSSELS EXPOSITION, 1910—THE MONACO BUILDING.

as would seem desirable. It has been necessary to reconstruct the house mainly upon the basis of descriptions contained in deeds (*actes de vente*) and in the writings of amateurs of architecture, between the years 1614 and 1628) and in 1692; and such assistance as is afforded by the existing skeleton of the house which has been converted into two or three *bourgeoise* houses; and been dis-

mantled, and all but demolished, in making the changes desired by successive occupants. The portico and the garden pavilion remain and are in a tolerable state of preservation. The above is practically all of the information the architect charged with the construction of the Antwerp Pavilion had to guide him. The written descriptions and legal documents prove that there existed a large house at the left of the site which Reubens purchased on January 4, 1611. Reubens conserved this old house and built to the right of it, on the part of the site which had been occupied by a laundry, *"une demeure somptueuse dans le gout italien."* A very fair description of the house that existed is preserved and has been faithfully followed in the building at the exposition.

The "new sumptious dwelling in the Italian taste" was, no doubt, designed by Reubens himself; and it was probably to assist him in his architectural studies for it that he carried to Antwerp the drawings of Genoese palaces which he published in 1622. Probably the building of it also led him to form an architectural library, for it is recorded that in 1615 he bought from his friend Moretus two editions of Vitruvius, and a bookbinding account shows that among books which he had bound during the years 1616 and 1617 were *L'Architettura* of Serlio and *les Oeuvres de Saloman de Caus.* In 1617 he also bought *Scamozzi's l'Architettura* and *l'Architecture* of Jacques Franquart.

The two engravings by Harrewijn furnish several illustrations of the house, especially of the extensions designed by Reubens; but without an intimate knowledge of and a strong sympathy with that master's actual work, it would have been impossible to have given the luxuriant buoyancy which is so characteristic of everything he touched and which pervades the *"Maison Reubens"*—as the Antwerp pavilion is called—in the extremely interesting design which may be regarded as the joint work of some *habile* Flemish designer of the sixteenth century, of Peter Paul Reubens, and of Mr. H. Blomme of Antwerp, for to the latter is due more than the credit of mere "restoration." His work possesses the spirit of, as well as the semblance, to the best work of the Renaissance. (Fig. 6.)

The pavilion of Liège, adjoining the Antwerp Pavilion, is characteristic, but is of that peculiar mixture of "dry bones and ashes" which dominates the designs of the architects of the borderland of Belgium and Germany.

The Palace of Women's Work, which terminates the Avenue of Concessions, is a fair, but not very interesting, conventional classic design.

At the end of the road leading directly from the main entrance of the exposition and passing between the two last-mentioned pavilions, is an entrance to the *Salle des Fêtes*—a plain rectangular structure covered with *treillage*. It has a fine interior treated with canvas walls and ceilings upon which are painted architectural details, sculpture, etc., in the fashion of northern Italy. One may pass through this hall and out at the main entrance behind the Brussels Pavilion. The principal façade is elaborately designed in green trellis, with colored panels containing gilded modeled ornaments, and, above the cornice, has a row of vases or baskets, made of gilded trellis. The whole effect is simple and notably pleasing.

At the side of the main entrance to the *Salles des Fêtes* is the ornate pavilion of the Canadian Pacific Railway (Fig. 15), built primarily to advertise the company's railway and steamship lines, but proving one of the special attractions as an exhibit. Externally, the impression intended as to color is of a marble monument ornamented with antique bronze; the absence of joints and of any fine detail as would be appropriate to marble, as well as the flat treatment of the mouldings, etc., admits the real nature of the surface material. The ornamental details are made up of trophies of the chase: bearskins, antlers and heads of mountain sheep, elk, moose, caribou and hounds, game birds, hare, hunting bags, guns, fishing-rods and strings of fish; these are arranged as *chutes*, garlands, etc., around the bas-relief panels of ships crossing the Atlan-

tic and Pacific oceans. A tympanum above the entrance contains a bas-relief panel representing a farming scene in Canada. The architectural ornament is composed of the foliage, flowers and fruit of Canada; and corn, wheat and rope, conventionalized, play a conspicuous part in the decorative features. Internally, the ceiling and a deep frieze—about four feet in height—are made of trellis woven with superb examples of natural grain in the straw. The electroliers are made of bands of gilded steel, and large baskets of artificial fruit, especially made, containing filaments and serving as electric lamps. The parts are assembled with double ropes, tied in sailor's knots. The windows, which are employed only as transomes and dormers, are filled with stained glass repre-

FIG. 9. THE BRUSSELS EXPOSITION, 1910—THE ITALIAN BUILDING.

senting shipping. The building was built as well as designed by the architect, and the modeling and decorative work, including the making of electroliers and some of the furniture, were executed on the spot. Young artists were employed instead of modern workmen wherever it was practical to do so, and the result seems to have justified the experiment.

The second Belgian Hall is opposite the *Salle des Fêtes*, and, like the remaining ones, is a plain boarded building of large dimensions, made agreeable by the judicious use of trellis, combined with decorative spots of gilded ornament, and flagpoles with plain but architectural sockets. All of the Belgian halls, also the *Salle des Fêtes*, are from the designs of Mr. Ernest Acker.

The natural course to follow, in visiting the exhibition after leaving the Canadian Pacific, is to pass along the Avenue of Concessions in which are the Pavilion of Ghent in the style of the sixteenth century Flemish Renaissance; the Spanish Government Building, a composition of parts of the Alhambra, of which a beautiful reproduction of the Court of the Lions, complete with the old fountain, is the principal feature; the Pavilion of *Recullon Frères*, a very interesting design, in Russian style, executed in stained and painted wood, with a plaster frieze over the doorway, composed of little bears battling, in pairs, with each other. In composition and color it adds a note of variety and interest to the exhibition. The exhibit is one of the most interestingly presented and planned in the whose exposition. M. de Montarnel is the architect. Next this pavilion is that of the *Ville de Paris*, designed by M. Roger Bouvard, of Paris, a very plain affair, of which the only interesting feature is a well-proportioned entrance with a column at each side and a pediment, filled with the arms of Paris, above.

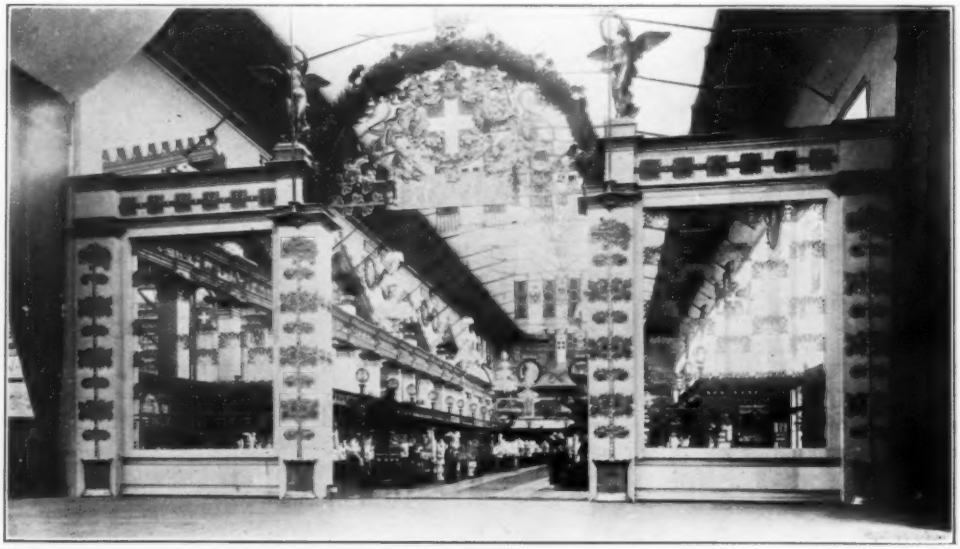


FIG. 10. THE BRUSSELS EXPOSITION, 1910—ENTRANCE TO THE ITALIAN SECTION IN THE INDUSTRIAL HALLS.

Opposite the Paris pavilion is an unattractive wooden building of some Dutch colony, and beyond this the gay and festive Pavilion of Holland (Fig. 11), which has a commanding site at the end of the Terrace of Industries, overlooking the Dutch and Parisian gardens, and down upon the roofs of the buildings of Germany. The Dutch Pavilion is in the only style one ever associates with Holland. Besides being typical, it is light and "trim" in its lines, and warm and

rich in color. It is the most cheerful and attractive pavilion in the grounds; but one only gets as far as the entrance when his sense of smell is assailed by the combined odors emanating from cheese, dried fish, tobacco and cocoa, and one retreats towards the French galleries and industrial halls.

The French section occupies the French Gallery and nearly one-third of the industrial halls, but except for some of the stands, and the effective interior decorations produced in connection with the dressmakers' and milliners' exhibits, the only work of special note, so far as architecture is concerned, is the great vestibule in the Industrial Hall, which has been lavishly ornamented with a very rich Ionic order, and a ceiling of stenciled canvas with *applique* decoration. The ceiling, in its effect of pomp and extraordinary scale, is enough to make Otto Reith turn green with envy. There is a stairway at one end which might win a Rougevin prize; but this stairway leads to a bridge which separates the French and English sections. The pavement of the bridge is the best point of vantage in the exhibition to obtain an experience in art. To be able to view, as a whole, the vestibule of the French section, with its rich color and rather extravagant "snappy" detail, full of *chic* and life—the spirit of the exposition *fêtes;* and then to make a turn on one's heel and face the whole length of the British section, gives one such a shock as one might experience if suddenly thrown from a comfortable chair before a warm fireplace into a cold ditch. One misses all detail and all "architecture" in the benumbing influence of the changed effect of the whole.

One is conscious, first, perhaps, of the difference in the ceilings, for the life of one emphasizes the deathly character of the other. The gay color, the clever decorations, the thought evident everywhere that small or great difficulty arises; above all, the wonderful skill displayed in the work of the French artisans, combine to make pitiable—if it were not so despicable!—the impossible show—for show, indeed, it is!—of the British neighbor. One feels that he must leave this bridge to get any idea of the British section; he must dissociate color and gaiety from the exposition and regard it only from the serious side. He must remember that the English idea, as one frequently sees it expressed in the native text books, of the proper way to expose an art work is to place it in a room that is devoid of everything else beautiful; that "plainness" should be accepted as applied to a building in the same sense that it is applied to a person —to denote a certain uncomliness of features or expression of vacuuity.

I have never heard the theory advanced so far as to suggest that a man should have the features of his face ironed out in order that his silk hat should appear to greater advantage, nor that diamonds should be exposed only in the middle of a golf green in order that nothing should approach them to detract from their brilliancy. But it is contended in England that a museum should be as bare as a barn, and that show cases should be "plain"; and, at an exhibition, the "goods are what the people want to see"; no architecture is desired.

It is probable that the new British commission, lacking experience, went to the Canadian commissioner for advice, as it is reported that the Canadian Building (which, fortunately, cannot be seen) and the "architecture" of the British section were "designed" and built by the same manufacturers of iron roofs; and the show cases were "designed" by the same show case maker. Both are as "plain" as could be desired by the most "practical" Englishman. I am not able to vouch for the authenticity of the report, but the work seems to bear it out. The main British hall is perhaps three hundred feet long by fifty feet wide, and the "order" adopted—which is according to Vignola—horizontally, and according to the spacing of the steel columns vertically, is, roughly, twenty feet high. The length of the colonnade at each side of the hall seems interminable, though it is broken in a few places, but very ineffectively, by a group of four columns, where only one is called for by the steel work! The ceiling is open to the roof; the iron trusses are covered

by sheets of thin white cotton, which the laundress seems to have dipped in "blueing" before it was hung in position. The cotton covers are cut, roughly, to the shape of the trusses, which have a raised tierod. At the end of this vision of magnificant distance is the "*Grand* Stairway" of the section. It is in perfect harmony with the show cases, the colonnade and the ceiling. The *Grand* Stairway (mark

FIG. 11. THE BRUSSELS EXPOSITION, 1910—THE DUTCH BUILDING AND DUTCH GARDEN.
W. Kromhout, Architect.

that word "Grand," and think of its English sense!) is "crowned" by—by a fountain!—a real fountain!—one that blows soap bubbles! and advertises a well-known soap. It is a glorious climax—this ridiculous fountain—to a "show" which will cover Britain with glory! "Still," a philosophical Englishman remarked, "my countrymen will be just as proud of our section as if it were as good as it was at St. Louis or Paris." and they would be equally proud if it were many times worse or infinitely better. There is but one standard among Englishmen when abroad, and that is, "Superior British." But the foreigner and the "colonial" and the "native" from the Far East, how does he look upon this show? Oh, if I could have but been a German! but once of the many times I have walked the length of this British hall; to have looked upon it casually, as the lay visitor does upon architecture and decoration; to have regarded the exhibits with the interest and amusement of the German manufacturer or merchant, who, after a visit to the buildings of the Fatherland, just across the garden, strolls through the French section and over the bridge to study this con-

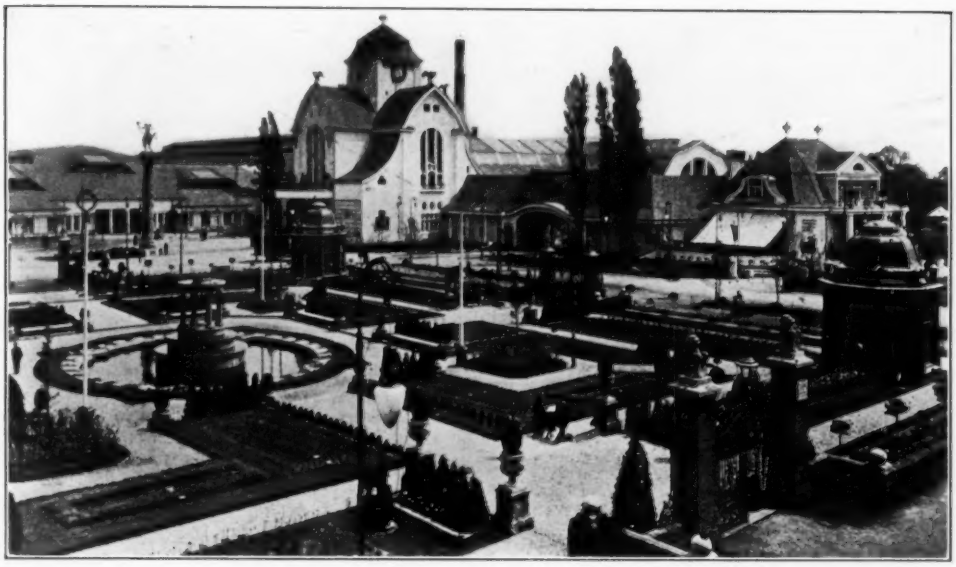


FIG. 12. THE BRUSSELS EXPOSITION, 1910—THE DUTCH GARDEN AND GERMAN BUILDING.
Prof. Emmanuel von Seidl, Architect.

temptible display of British incompetence! What inward exultation I might have felt!

The Italian section (Fig. 10) has a vestibule adjoining that of the French. In style it is distinctly Italian and modern, though the details show traces of the influence of every phase of style, beginning with the Gothic and extending to the latest *"Art Nouveau."* The color is

FIG. 13. THE BRUSSELS EXPOSITION, 1910—THE GERMAN GARDEN AND GERMAN FARM BUILDINGS.
Prof. Emmanuel von Seidl, Architect.

excellent, and though in a more intense key than the French, takes its place harmoniously beside it. The greater part of the decorations are executed in beaten metals—painted, enameled or chemically treated to produce different color effects. The great glass electroliers, and the employment of armorial bearings to add color, are the most distinctive details of the section. Italy also has a separate Government Pavilion (Fig. 9) in Renaissance style, with wide loggias across the front, and the wall surfaces treated with frescoes and mosaic decorations. The "staff" is colored to imitate Siena marble, and the statues to imitate white marble and bronze. The exhibits of the real materials are so well imitated that though placed side by side in the open air, it is difficult to distinguish between the two. The sculptures employed above the cornice are among the best piecs in the exhibition.

Between the Italian and the German buildings there is but one building of interest, that of Monaco. The small but wealthy principality is represented by a building of about the same extent as that of the Italian government, which it resembles in color as well as dimensions. The design is not remarkable, but is interesting because of the curious way in which *motifs* and details of several different styles of architecture are blended into a not unpleasant composition (Fig. 8)

At the lowest level of the main part of the site, and at the point farthest from the principal entrance, is the great group of buildings which house the exhibition representing Germany. As an exhibition, considered apart from its architecture, there is nothing at the Brussels Exposition which for completeness, comprehensiveness and organization can be considered as being in the same class with it. It is an exposition complete in itself, isolated and independent. Germany has never been represented at an American exposition with such an excellent and interesting collection of exhibits. In every branch of science, art and industry she shows up well; occasionally lacking in the thoroughness of handiwork to be observed in the British manufactures in the Machinery Hall, or in the artistic finish, style and taste displayed in many articles in the making of which France excells, but surpassing both these countries in so many other fields that, were one to judge solely from the exhibits at Brussels, one would not hesitate to place Germany "an easy first" among the commercial and industrial countries of Europe. As to the buildings themselves, they are admirably arranged for the convenience of visitors, well lighted and generally spick and span; and, except for the jarring hardness of the decorations, which are made up of all sorts of combinations of right-angle-triangled monstrosities of heavy black or purple lines on white or cream-color grounds, the interiors are good. Their proportions, forms and relation to one another are excellent.

Externally, it is a different matter. Seen from the terrace in front of the Dutch building, the wine restaurant and farm house (Fig. 12) are interesting, if not beautiful, and the pretty Dutch garden softens the composition by giving it an inviting setting. Between the farm house and the neighboring Monaco Building, the great mass of sprawling halls, given up to the arts and industries, is formidable enough. It reminds one of the tough young man who walks around with a chip on his shoulder and his fists doubled, challenging everybody to knock off the chip if they dare. Its black columns, its low white walls, with their fortressllike openings, its dark gray (almost black) tile roofs and dirty-looking skylights are enough to remind anyone who has visited the country that Germany is the Forbidden Land. From the time one enters a German train bound for its borders until one has left another train beyond them, he encounters at every few steps a small white sign with a legend in black, block letters informing him that something or other is "Verboten." One expects to find it at the entrance to the halls mentioned at the exhibition, and need not be disappointed, as the moment the hour for closing comes there is hung in each doorway a sign informing the public that "to enter is forbidden," but the buildings themselves seem to say as much at all

hours. From the German Garden (Fig. 13) the one charming view of the German buildings is obtained, but one has only to turn towards the entrance to the big Railway Hall of the group to discover what a defacement to a landscape a building may be. If Hades were possessed of an entrance like this, the inscription above it referring to Hope might well be dispensed with!

From the German section one passes over the elevated road above the Plain of Attractions to the French Agricultural Building (Fig. 16), designed by Monsieur H. Guillaume, of Paris. It has an excellent exterior, with appropriate ornamental details, and consists of one wide low gable, broken by four slender towers. Treillage is again adopted as a surface decoration, and is employed in a very original way in this design; garlands, scrolls and fantastic curves are executed in combinations of wood letters in an enlivening though less suited-to-material manner than upon any other of the buildings where it is adopted as decoration.

The Belgian Agricultural Buildings are good academic designs of large dimensions, but lacking in distinction; the best of them might get a "first mention" in a students' competition of the Society of Beaux-Arts Architects, but it would not get a medal.

In the Group of Buildings of the French Colonies (Fig. 17), Tunis is represented by a charming building in Moresque style, with a very beautiful little court. It was designed by M. Guy, the government architect at Tunis. Almost equally attractive is another building in the same style, but smaller, which represents Algeria. This is one of the happiest bits of employment of color possible in building, but the effect does not permit of brief description. Indo-China and French West Africa each has its own pavilion; the latter is the work of M. Gustave Umbdenstock. It affects a rather German composition, executed in brown rough-cast, has an eccentric tower, a wide porch roofed with straw, and would be more appropriate in the "Plain of Attractions" than among buildings erected to show the progress of civilization in the colonies. The *Pavilion des Colonies Françaises* is a refined and delicate design, by Monsieur C.

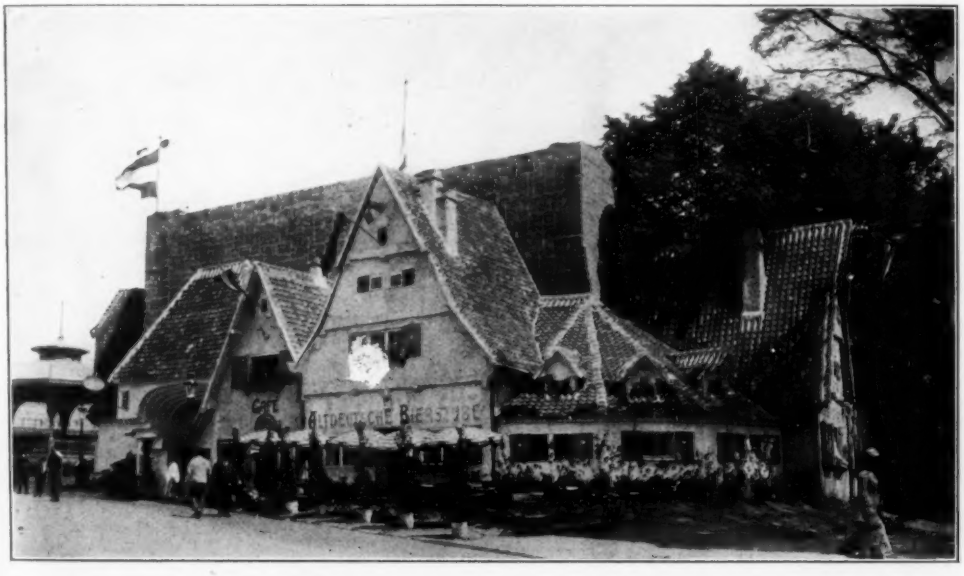


FIG. 14. THE BRUSSELS EXPOSITION, 1910—ONE OF THE GERMAN ATTRACTIONS, "ALT DUSSELDORF."

Lefèvre, suggestive of Italian influence. It has a central arch and two flanking towers, reminiscent of the Villa Medicis at Rome, and an Ionic colonnade at either side. The design is rather too delicate for the coarse material employed. To be effective, it should be built of marble or stone.

The last building worthy of note is a German restaurant called *Alt Düsseldorf,* a quaint and picturesque jumble of imitation old German buildings (Fig. 14), which, in addition to its own attractiveness, has a value apart which consists in effectively shutting out of sight the ungainly building of Canada.

FIG. 13. THE BRUSSELS EXPOSITION, 1910—CANADIAN PACIFIC RAILWAY PAVILION.
Frances S. Swales, Architect.

Fig. 16. French Section.

Why Canada always has the worst type of building in any exhibition wherever she is represented is not reasonably clear. There are surely plenty of architects in that country capable of producing a building that would be a credit to the national intelligence; and not seem to advertise to the world Canada as a country without taste, ideas or education.

There is no American building at the Brussels Exposition, nor any official section. When the government does not take official part in these international exhibitions it ought to take some measures to prevent gross misrepresentation by "fakers" or speculators, who have the habit of conducting unauthorized "American" sections and using the flag of the United States as a device for catching unwary exhibitors. Something of this sort appears to have occurred at Brussels, where some half-dozen stanchions in the Industrial Hall are wrapped in the Stars and Stripes, after the fashion of a barber's pole. A small case of Yale & Towne hardware appears to be the only legitimate exhibit in the section, which consists principally of candy stalls and booths for the sale of cheap jewelry and small novelties.

As a whole, the Brussels show is very interesting and worth seeing. It lacks a monumental plan, which all of the recent expositions have had, and the best features of the original scheme of circulation have disappeared; but admitting these drawbacks, and others hardly less poignant, it remains a great and well-organized exposition and a credit to the commissioners-general and the executive committee who built and control it, and to the citizens of Brussels who are doing everything in their power to make visitors welcome and the exposition a successful business enterprise.

Fig. 17. French Colonies Pavilion.

WILLIAMS COLLEGE—THE THOMPSON MEMORIAL CHAPEL (1903).
Williamstown, Mass. Allen & Collens, Architects.

DARTMOUTH COLLEGE FROM OBSERVATORY HILL.
Hanover, N. H. Chas. A. Rich, Architect.

# ARCHITECTURE OF AMERICAN COLLEGES

VI.

## Dartmouth, Williams and Amherst

MONTGOMERY SCHUYLER

**DARTMOUTH (1769)**

Whoever invented the time-honored and now antiquated gibe of "freshwater colleges," whether himself educated by the tidewater of Boston Bay or of Long Island Sound, had a pretty gift of sarcasm. There is about the expression such a double contempt for the countryman and the provincial. The Atlantic seaboard was in fact, by its easier accessibility from Europe, more open than the "hinterland" throughout the Colonial period and for half a century after it, to European culture. The cultivated European found himself much more at home in the towns of the coast than among the pioneers of the backwoods, and with a much better prospect of turning his culture into a livelihood. No mere "scholar," above the pretension of a district schoolteacher, had anything to do outside of the coast towns. Only the zeal of a missionary would have taken him inland.

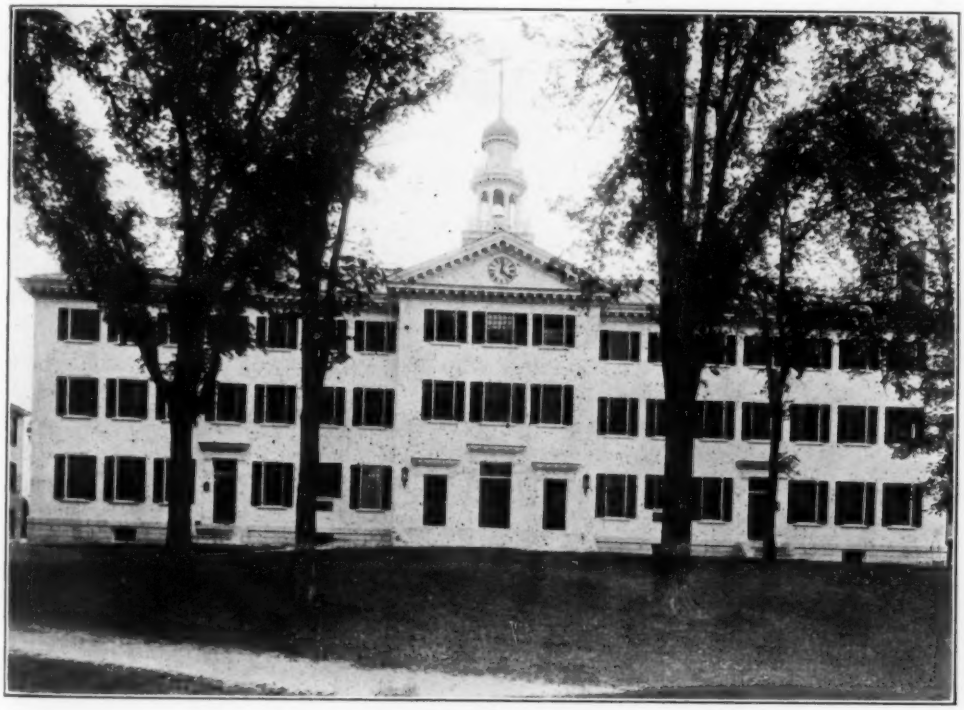
In fact, it was precisely that zeal which led to the foundation of the earliest of the "freshwater colleges," Dartmouth, to wit. Brown is five years older by its charter, but, of course, the water of the Narragansett Bay is no "fresher" than that of Long Island Sound or Massachusetts Bay, and Brown was from the beginning a town college. In 1764, when Brown was chartered, Providence was comparatively of more importance than it is now. In 1769, when Dartmouth was chartered, Hanover was in the heart of the wilderness, at least on the frontier of civilization. That was the place for it as the Indian mission which it originally was, and the Rev. Eleazar Wheelock moved his Indian school backward from

Connecticut, the whole breadth of Massachusetts and almost half that of New Hampshire, to be nearer the raw material of his pupils and his converts, making his way up the Connecticut Valley, where only a few pioners had preceded him, attracted not at all by the beauty which makes the ascent of the valley so very well worth while under modern conditions of comfort and swiftness, but by the richness of the alluvial "intervale," to use that picturesque and expressive locution of New England which might have been invented to describe the characteristic of this valley. Joshua Moor's gift of house and land for an Indian Charity School had become operative fifteen years before Wheelock obtained from Governor Wentworth a collegiate charter for the institution which was named in honor of its most sympathetic and munificent of its British patrons.

It is interesting to know that at least by the beginning of the nineteenth century Dartmouth had a plan for its topographical and architectural development. In 1802 we find the trustees of the "South Carolina College," then working out a like scheme for that institution, ordering a payment of eight dollars to "Mr. C. Perkins for his trouble in transmitting a plan of Dartmouth College." If Dartmouth had then or later reverted to its beginnings for an architectural type, the type would have to be a log cabin, for it was in log cabins that its earliest public service was performed. The fact is a proof of its remoteness. Not even a sawmill in the upper valley of the Connecticut in those old days, for the beginning of the sawmill is the end of the log cabin, which with a sawmill becomes an extravagant instead of the very cheapest form of shelter. "It did not happen to me to be born in a log cabin," said the greatest of the graduates of Dartmouth, "but my elder brothers and sisters were

DARTMOUTH COLLEGE—OLD DARTMOUTH HALL (1790).
Hanover, N. H.

born in a log cabin," and Dartmouth was chartered twenty-three years before Daniel Webster was born. The clapboarded house which is still shown as his abode at Dartmouth is an evidence that in his time the sawmill had arrived. More imposing evidence was furnished by Dartmouth Hall, which, although the record does not establish its precise date, was pretty certainly there about 1790, or seven years before Webster's undergraduate time. This, indeed, was monumental evidence of the pervasiveness of the sawmill at the time of its erection, monumental in dimensions if not in durability, comparable in extent with the enormous and flimsy summer hotels of a later generation. It had nothing of architectural pretension but the graceful belfry which surmounted it and which doubtless did credit to the carpenter who was its architect. The evidence survives, though the building is gone. It fell a victim to the construction in 1905. But the embers of the fire were not yet cold when the college architect received a telegram from the college president calling for a reproduction of the building in incombustible material. Thanks to photography the order was filled. The reproduction is exact enough to deceive the returning old graduate, who does not observe until he comes close, that brick painted white has replaced the clapboards, nor that some four feet have been added, for reasons of utility, to the total height.

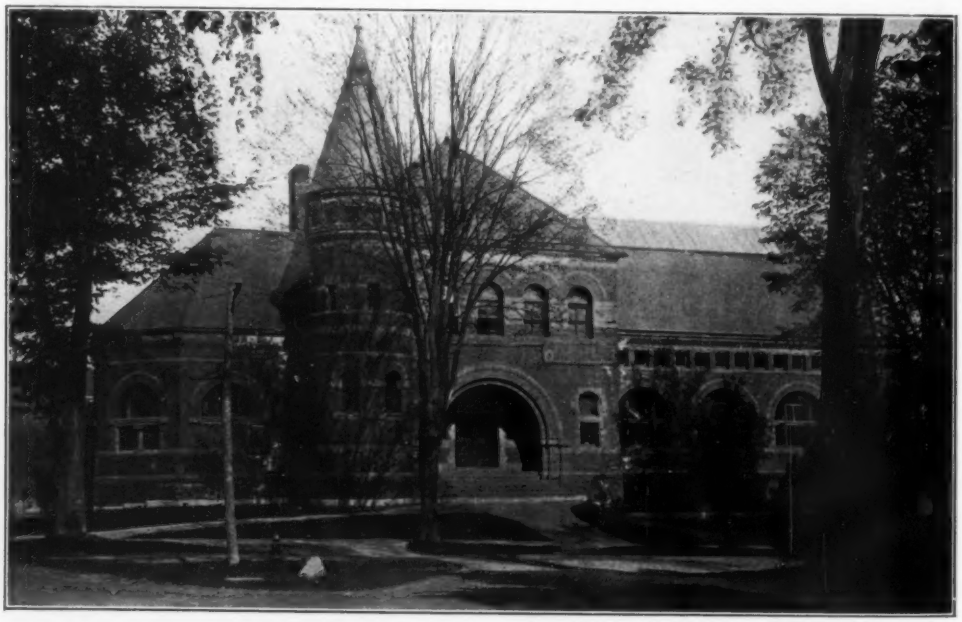


DARTMOUTH COLLEGE—NEW DARTMOUTH HALL (1906).
Hanover, N. H. Chas. A. Rich, Architect.

But though this product of the sawmill was very well worth preserving, and even reproducing, as a matter of piety, and as a relic, it would by no means serve as a negotiable "type" of collegiate architecture, not even so well as the autocthonous and "slow-burning" log cabin might have been made to do. It was happy for the college and its architect when Mr. Rich became that architect in 1890, that the college had built so little during the nineteenth century, that he had so nearly

DARTMOUTH COLLEGE—ROLLINS CHAPEL (1885).
Hanover, N. H. W. L. Faxon, Architect.

a clean slate. The riparian buildings of the campus, besides that very ambitious specimen of Colonial carpentry we have been talking about, and another specimen in the form of a "meeting house" attractive by force of naivete, had inherited nothing from the politically or the architecturally Colonial period, but the



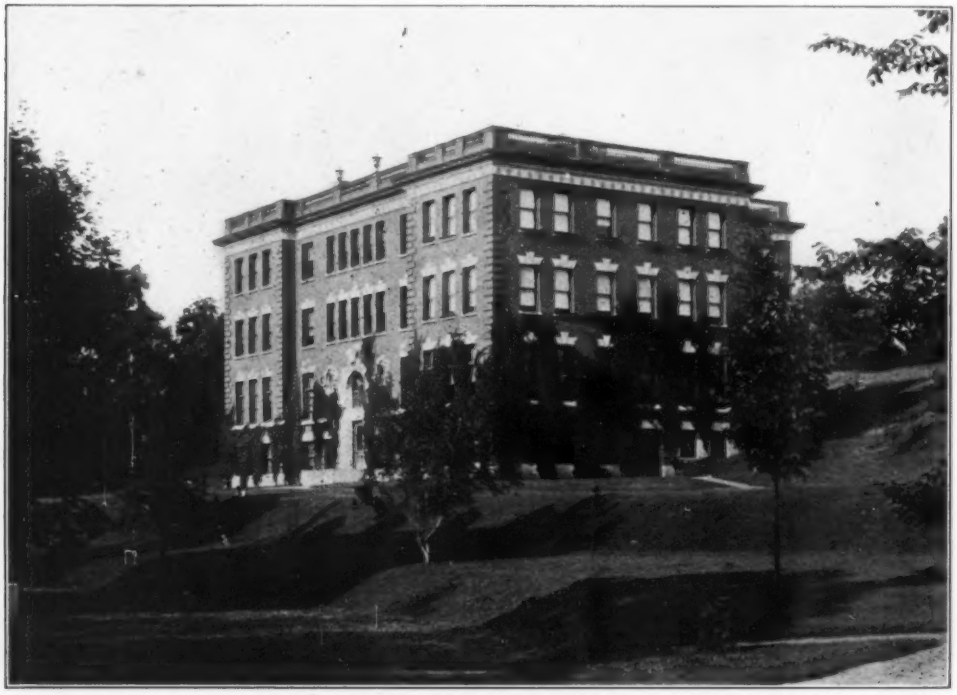
DARTMOUTH COLLEGE—THE LIBRARY (1885).
Hanover, N. H. S. J. F. Thayer, Architect.

vernacular clapboarded house with green blinds which one still finds much more rife in the Connecticut Valley than elsewhere. Among the examples at Dartmouth was not only the humble cot in which Danial Webster "roomed" but the larger and more elaborate specimen in which was married that only lesser glory of Dartmouth, Rufus Choate. There was at least no Gothic, either of the thirties or of the sixties and seventies. And this was a clear gain to a subsequent architect. Not that either the castellated Gothic which called itself collegiate of the earlier revival, with its crenellations and machicolations commonly in wood, or the Anglo-Italian of the second with its polychromy, was not an eligible manner of building in which an entire college might have been carried out to impressive results, but that either is so dissociable with any mode of building proceeding from the Italian "revival" of antique architecture with antique letters. The Romanesque revival initiated by Richardson did, indeed, leave its traces upon Dartmouth in three buildings of which the Rollins chapel is the most noteworthy, a regular and rather picturesque composition, with a tower well enough adjusted to the original building, but which seems rather diminutive now that that building has been extensively enlarged, with granite walls of that Cyclopean masonry which one is loath to admit as masonry at all, seeing it excludes the notion of any effective bonding, and relies upon the cohesion of the mortar alone for the stability of the wall, and with wrought work of brown sandstone according to the effective Richardsonian contrast. The other two Romanesque buildings, the Y. M. C. A. and the library, are discreet and unpretentious examples, quite without offense and even with an interest of their own, in brick and brownstone. These by no means constituted stumbling blocks in the path of the subsequent designer, who, upon the whole, had an unusually

DARTMOUTH COLLEGE—BUTTERFIELD MUSEUM (1890).
Hanover, N. H. Chas. A. Rich, Architect.

Dartmouth College—The Y. M. C. A. (1890).
Dartmouth, N. H. S. J. F. Thayer, Architect.

thing an architect might be supposed to bestow upon a collection to which he expected it to be his only contribution, not at all the kind of thing which he would be apt to lay down as a point of departure for his own future work. To conform to the work, even past and still more future, of another, is the rarest stretch of self-abnegation on the part of an American architect. Nor, indeed, is Wilder Hall much more to the ultimate purpose, though this is at least in the less exceptional and, for its object, less exceptional

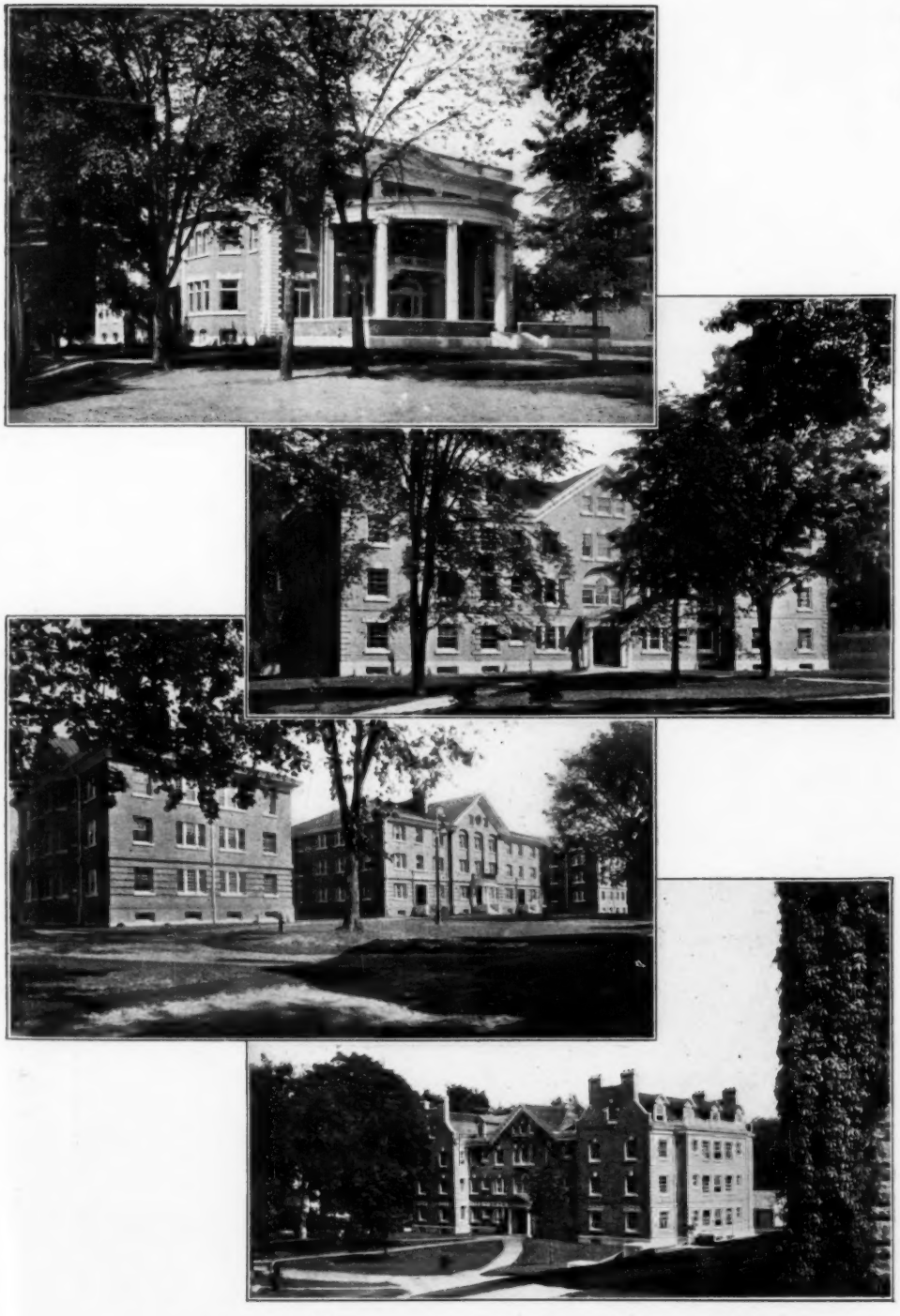


DARTMOUTH COLLEGE—WILDER HALL (1899).
Hanover, N. H. Chas. A. Rich, Architect.

free field for the rebuilder of an old college.

The new designer signalized his advent upon this field by the device, so much commoner, at least so much more intentionally common, in music than in architecture, of "beginning out of the key." For the Butterfield Museum has as little in common with its successors as with its evidently disesteemed predecessors. In itself the building, a superstructure of buff brick over a basement of light limestone, is a studied and scholarly enough piece of Renaissance, quite the kind of

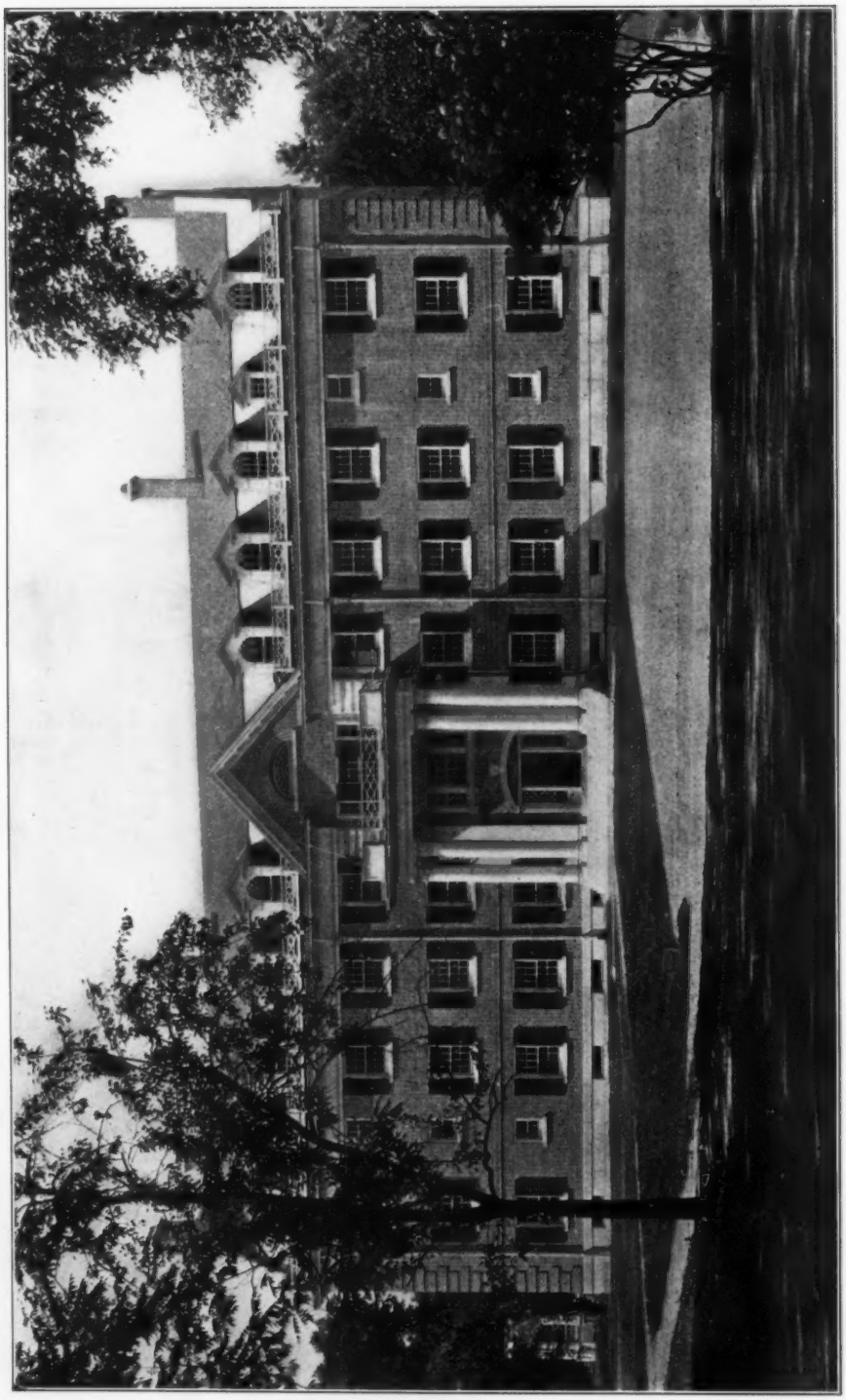
Dartmouth College—Richardson Hall (1897).
Dartmouth, N. H. Chas. A. Rich, Architect.



College Hall (1900). New Hampshire Hall (1908).
Fayerwether Halls (1900). Wheeler Hall (1905)

DARTMOUTH COLLEGE.

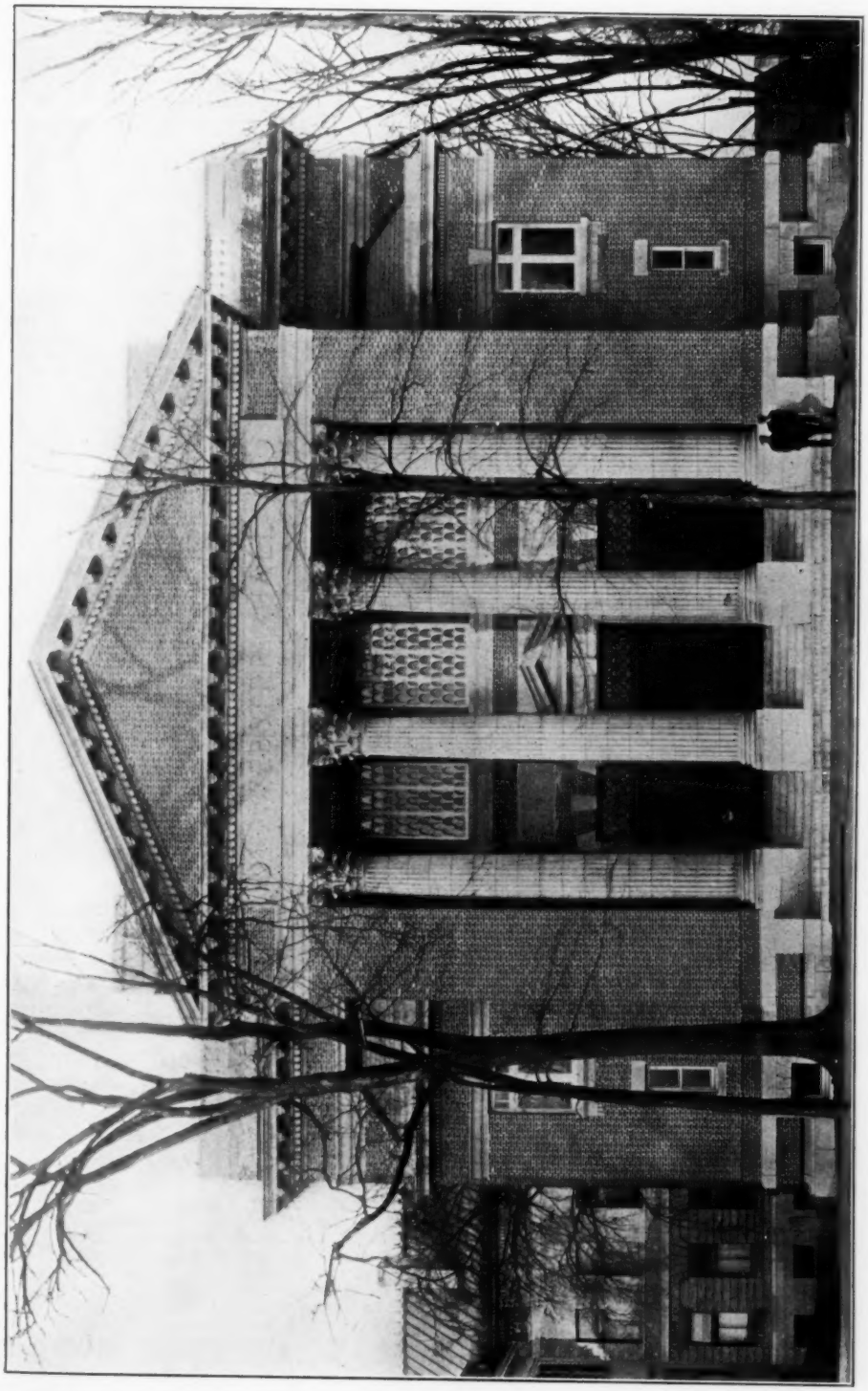
Hanover, N. H. Chas. A. Rich, Architect.



DARTMOUTH COLLEGE—MASSACHUSETTS HALL (1907).

Chas. A. Rich, Architect.

Hanover, N. H.



DARTMOUTH COLLEGE—WEBSTER HALL (1906).

Chas. A. Rich, Architect.

Hanover, N. H.

tionable material of red brick, and though the absence of a visible roof, which is the defect the spectator mainly resents, was enforced by the necessity of keeping the building below the horizon of the telescope erected on the knoll behind it. If the Dartmouth campus had comprised only such edifices as these, it would by no means be the interesting and attractive place it is. So far, hardly so eligible a point of departure as the Romanesque which preceded it. That "Colonial" reproduction and modification of the British Georgian which prevailed at the time when Dartmouth was chartered, in places where building was more durable and more costly than the upper Connecticut Valley, was pretty imperatively indicated as the style of Dartmouth. It is the style of the later buildings which give the college its chief architectural interest and they show a pretty uniform progress in the treatment and combination of the traditional forms. What they have in common is the material, a rough red brick with emphatic mortar-joints, commonly quoined at the angles in brick or stone, with a sparing use of stone, or even an enforced use of wood in simulation thereof, and the classicism of the detail, mostly in the dormitories of that degeneration of the Palladian orders, themselves degenerate, which in our Colonial, had become so established as to have almost the effect of a vernacular style, but in the more monumental, especially in the most monumental, aspiring to and attaining a classic purity. There is, nevertheless, so much unity of style that the more pretentious buildings are in keeping with the simplest, and each with the really vernacular building of the surrounding relics of comparative antiquity. One would be at a loss to designate any place in which the repertory of the style has been more skilfully or sensitively handled or to a better general result. The simplicity and straightforwardness, the baldness, even, of the design of the Fayerwether Halls, or of New Hampshire, has nothing of incongruous with the greater variety of Wheeler, or the greater ornateness of Massachusetts, rises quite easily and naturally into the peristylar colonnade of "College Hall," seat of the "Commons" and the centre, as it looks to be, of the communal undergraduate life, and to the monumental dignity of Webster Hall, one of the most impressive, inside and out, of college auditoriums. The interior is especially impressive by the sense of magnitude and spaciousness which is imparted quite as much by the treatment as by the actual dimensions, considerable as these are. The rear of the hall shows a treatment which may afflict the architectural purist, seeing that an arched screen wall opens through a great central arch upon a semidomed apse, but one fails to see why the purist should be otherwise than conventionally shocked. It would be pleasant, but for the restrictions of space, to expatiate upon the varieties which these buildings show, including the still unfinished gymnasium, along with their unity. But it is the unity that most and most favorably impresses the spectator. In all these later buildings the indications and "leadings" of the earlier Dartmouth have been faithfully followed, and the result is one of the most interesting as well as one of the most homogeneous of our "college yards." Even the tavern that fronts a corner of the campus has been infected with the spirit of the college architecture, though it is true that the "fierce democratie" of the "Hampshire Grants," at the time of the foundation of Dartmouth, would have been apt strongly to resent its crow-stepped gables as the badges of the Albany Dutchman, with whom they were waging a chronic dispute about boundaries and titles. Upon the whole, the architecture of the new Dartmouth does not misbecome the wonderful natural scene so vividly painted by Rufus Choate in his eulogy upon Daniel Webster in 1853, one of the two commencement addresses at Dartmouth that will long remain memorable, the other, of course, being Emerson's still more memorable oration upon "Literary Ethics," delivered at the commencement of 1838:

> Still the same outward world is around you, and above you. The sweet and solemn flow of the river, gleaming through interval here and there; margins and samples of the same old woods, but thinned and retiring; the same range of green hills yonder, tolerant of culture to the top, but shaded then by primeval forests, on whose crest the last rays of sunset lingered; the summit of Ascutney; the great northern light that never sets; the same nature, undecayed, unchanging, is here.

**WILLIAMS**
**(1793)**

Dartmouth was the last of the Colonial charters. Thenceforward the troubles which led to the Declaration of Independence and the troubles which ensued in making it good diverted the attention of Americans from projects of education until the government of the United States was established in 1789. An accomplished friend has reminded me how sudden and how widespread was the "revival of learning" after that event. St. John's College, at Annapolis, which had maintained an embryonic existence since 1744, when it was projected as Governor Blagden's "folly" and a Scotch architect imported to do its building, received its charter only in the very year of the establishment of the new government. Within the next decade six new colleges were founded upon or just beyond the frontiers of New England. The establishment of the University of Vermont, in 1791, preceded the admission of the State into the Union. Bowdoin, in the far East of what was still the "District" of Maine, and Williams in the northwest corner of Massachusetts, received their charters in 1793. Indeed, the chartering of Williams was not otherwise related to the change of government than that the establishment of the new government gave men time to attend to it. For it proceeded from the will of its benefactor and name-saint, Col. Ephraim Williams, who was killed at the battle of Lake George, in 1755, and, although the will itself sets forth that it shall be executed only "within five years after an established peace," the date of it sufficiently evinces that the only disturbers of the peace the testator had in view were the "French and Indians" fighting against whom he fell. But it was not until 1785, two years after the "established peace" following upon a war he did not foresee, that steps were taken to execute the will by which he left the proceeds of some of his landholdings to found a free school in the "West Township," which he stipulated should be called after him. It was not for seven years after the will had been construed by the legislature and the school put into operation that it was im-

WILLIAMS COLLEGE—BERKSHIRE DORMITORY (1905).
Williamstown, Mass. Allen & Collens, Architects.

pressed upon the trustees that there were "several circumstances attending the situation of the free school" which were "peculiarly favorable to a seminary of a more public and important nature"—in point of fact, to a college, the charter of which was accordingly granted the next year. The chief of the "several circumstances" may fairly be presumed to have been the isolation of this corner of Massachusetts from the rest of the state by the ridge of hills that then cut off access to it from the East. Rather more than a century ago, and rather more than half a century after the foundation of Williams, Dr. Holmes still cited as synonymous with the Greek kalends, the time

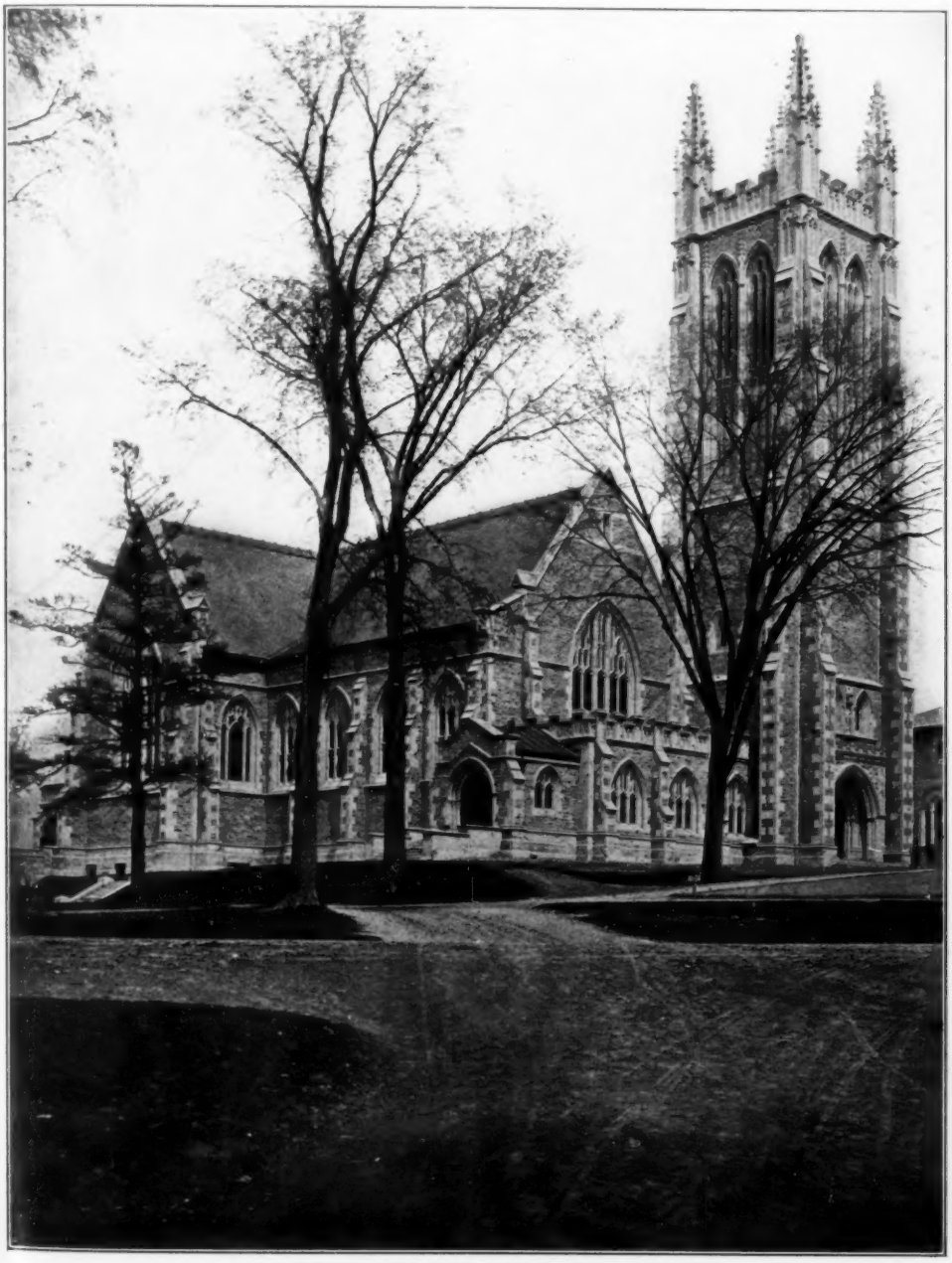
> When the first locomotive's wheel,
> Rolls through the Hoosac tunnel's bore.

The ultramontane college seemed by its situation destined to serve a restricted

Williams College—"D. K. E." House.
Williamstown, Mass.

community, Vermont, on the north, having already its own seminary, two years earlier, and New York, in the latitude of Williams, being about to have its own at Schenectady, where Union was chartered two years later. Its early building could not be expected to be anything beyond the satisfaction of its absolute physical needs. In fact it was no more. Professor Huxley's "honest bricklayer" put up his parallelopipeds which were even less interesting than the architectural beginnings of Harvard or Yale in that they lacked the expressiveness which a visible roof confers. That was the period, commemorated by Fenimore Cooper in "The Pioneers," when it was held that the roof "was a part of the building that ought to be concealed." A visibly covered box is at least a more expressive object than a box without a cover, and "West College" is as devoid of architectural interest as can be any structure intended for human habitation. One remarks with some regret the conformity to the original type which has been practised by the architect of the Berkshire Hall which, with two of the old buildings and one new one, fills out the "Berkshire Quadrangle." The detail of this is in general "Colonial," and the building in general eminently decent, even if it aspires to no higher praise. But the detail of the porches and the want of a roof ally the building rather with the "Greek revival," during the period of which the superstition mentioned and apparently shared by Cooper did undoubtedly prevail, at least in domestic building, and, as a consequence, produced houses of much less architectural interest than the Colonial, which it succeeded and superseded. There is nothing in the original building of Williams on which to found. Alumnal piety is required to find the old Observatory and the other more ancient relics architecturally as well as historically interesting. The president's house is undoubtedly interesting and typical of its period, the period when the Greek revival was beginning to supersede the Colonial, when the emancipated carpenter was emboldened to a pathetic experimentalizing instead of sticking to his Palladian formulæ. The carpenter effaced the roof of this edifice, so far as possible, by masking it with a picketed balustrade. There was, indeed, so little in the early architecture of Williams which compelled or invited conformity that it is less remarkable and culpable here than on some other campuses that each succeeding architect, when the college or its benefactors began to employ architects, should have done what was right in his own eyes without reference to the past or the future, and have distinguished himself and his particular benefactor by his exceptionality. In general, one may say, the present choice of the college architect is between Georgian and collegiate Gothic. At Williams there is nothing of either. There is an example of Romanesque, after the Richardsonian version, in Hopkins Hall, at least in the entrance to it, though the building, in

general, is of no style. There is a reminiscence of the Spanish Mission in the curvilinear gables of the gray monochrome of Morgan Hall. The three Thompson laboratories are noticeable for the emphasis of the roofs suppressed in the earlier buildings, and, if not exactly their own excuses for being, are



WILLIAMS COLLEGE—THE THOMPSON MEMORIAL CHAPEL (1903).
Williamstown, Mass. Allen & Collens, Architects.

respectable for their air of fulfilling a useful purpose, and in their decency and straightforwardness there is no lack of comity. There is a startling lack of that quality in Jesup, whose garish gamboge fires the air of the whole campus. Undergraduate ebullience frequently takes the form of painting the college monuments, to the pain and grief, as is assumed by the undergraduate, of his revered preceptors. But a judicious faculty would sympathize and connive at,

WILLIAMS COLLEGE—INTERIOR OF THOMPSON MEMORIAL CHAPEL (1903).

Williamstown, Mass. Allen & Collens, Architects.

if it did not actively instigate, the tasteful and praiseworthy prank of the "ambitious youth," who should determine to wreak his high spirits upon painting Jesup.

The fraternity houses which are becoming so important features of collegiate architecture, as the fraternities themselves of college life, are as much in evidence in Williams as anywhere. In these, of course, one by no means expects the conformity, the single adherence to some general scheme and common style, which he has a right to require of the buildings of the institution itself. In fact, diversity, variety, are here perfectly in place, and if the aggregate constitutes an architectural museum no harm is done. The earliest of the fraternity buildings at Williams, one supposes, is the half-timbered cottage designed in the early seventies for the Kappa Alpha by a member of that fraternity. The Colonial mansion of the "D. K. E." is as good an expression as another, and one welcomes the nondescript picturesqueness of Delta Psi. The "Sig" lodge promises a substantive interest of architectural history, when one is told that it is "the old Van Rensselaer manor house of Albany," transported to this new setting, unless one happens to know that all the features which give it any architectural character were added from the designs of Richard Upjohn in 1849, in which case, it is true, one still looks at it with a certain interest, though by no means that which the description is calculated to inspire.

Notwithstanding these things, Williams has one building of an exceptional interest, which it owes in about equal degree to the munificence of the donor and the skill of the architects. This is the Thompson Memorial Chapel, an interesting and scholarly and picturesque design in the "decorated" phase of English Gothic. What makes it remarkable and exceptional among our "college fanes" is the liberality with which the design has been carried out. There is no evidence anywhere of any skimping, whether in the substitution of an inferior material for the most desirable, or in stopping the elaboration of workmanship short of the point to which it ought to be carried to attain the intended result. Plainly, the architects have in this case found the client for whom all architects yearn. As plainly the client has found architects worthy of his munificence. The chapel has struck a keynote which may be expected to impose itself upon future architects and future benefactors. The praise of Williams is well known of one of the most famous of her graduates, the only one who has thus far attained the Presidency of the United States: "A college is a bench with a boy on one side of it and Mark Hopkins on the other." Such an institution, the assumption of Garfield's epigram may be, can dispense with architecture. If we are to take the epigram literally, such an institution can dispense even with a library. But even "Mark Hopkins" is none the worse, and the more ordinary educator is much the better for such assistance to his inculcations as good architecture can furnish. And of such architecture the Thompson chapel is an exemplary beginning.

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**AMHERST**
**(1825)**

Perhaps it were rash to say that if the tunnel had burrowed through Hoosac Mountain before 1825 Amherst College would never have existed. But it is certain that a recent president of Williams, Zephaniah Swift Moore, led the majority of his students across the mountain in 1821 to resume their studies under him in the "Collegiate Charitable Institution" which had provided itself with a building, the present "South College" of Amherst, and of which he became president. The special charter of this institution contained a provision allowing Williams at any time to unite with it. The invitation was accepted only by the irregular secession of Moore and his followers, and this was of course deeply resented as treacherous by the faithful remnant which he had left behind at Williamstown. Time has shown that there was ample scope for both institutions, and that both could prosper and increase.

Almost as soon as it had obtained its regular collegiate charter, in 1825, Am-

South College, 1821. Chapel, 1827. North College, 1822.

AMHERST COLLEGE.

Amherst, Mass.

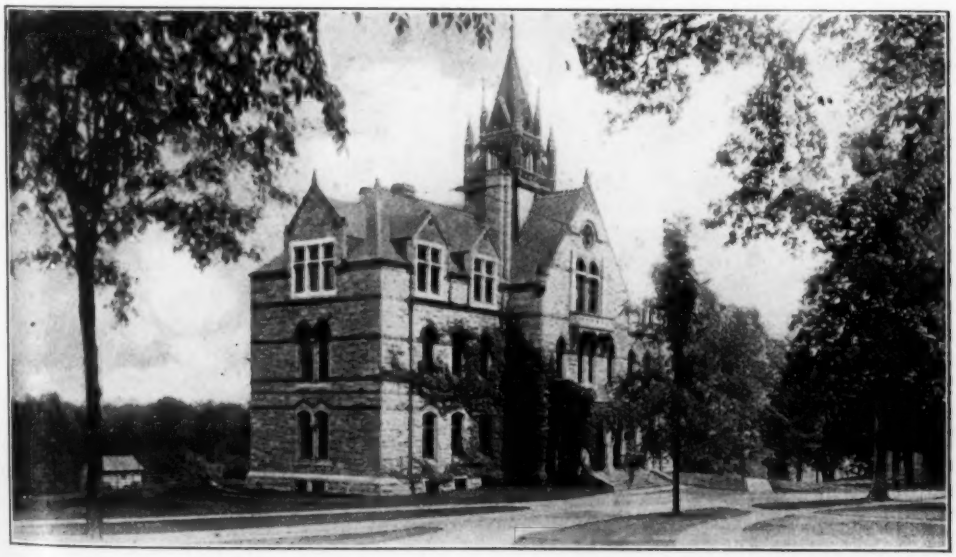
herst had provided itself with what may be called a typical set of quarters for a "small college," a central "recitation building," containing also the chapel and the library, flanked by dormitories. These edifices continue to constitute not only the nucleal, but the dominant, feature of the actual institution. All the colleges we are considering are, fortunately, placed among beautiful or impressive natural surroundings—Dartmouth on its terrace above the "sweet and solemn flow" of the Connecticut, Williams among the bolder and more precipitous heights of the Taconic range, almost within the shadow of Greylock, the tallest peak in Massachusetts, and in one of the most alluring sites that

AMHERST COLLEGE—COLLEGE HALL (1830)—REMODELED.

Amherst, Mass.

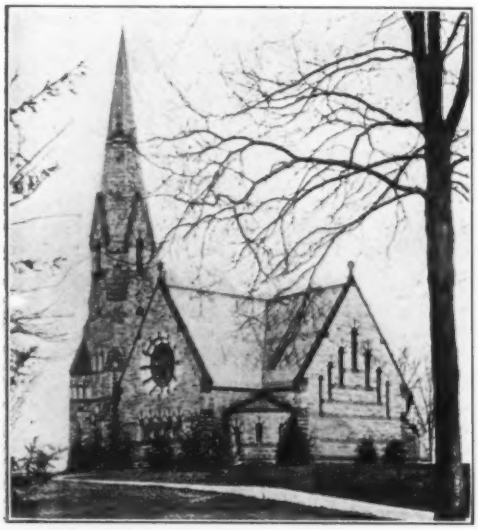
AMHERST COLLEGE—HITCHCOCK HALL (THE BOLTWOOD HOUSE).
Amherst, Mass.

even Berkshire affords. But Amherst has the distinction which belongs to a college set on a hill, and this hill, the crest of which Amherst promptly pre-empted, commands a noble prospect of the subject lands, in spite of the crowded grove, the grove of Akademia, which shows that even a college that is set on a hill can at times be hid, a grove which Amherst has been well advised to prune and thin but very sparingly. She has been well advised, also, in keeping the ridge for her patrimonial buildings and keeping her more "architecturesques" additions at a distance which secures the nucleus from interference, and promotes the homogeneousness of the total impression. Two other buildings she



AMHERST COLLEGE—WALKER HALL (1871).
Amherst, Mass. George Hathorne, Architect.

now possesses which seem to be coeval with the first college buildings. "College Hall," which was built for the village church in 1830, acquired by the college in 1867 as its academic theatre, and has been within the last decade repaired and furnished with a becoming portico by the piety of a class. The other, now known as "Hitchcock Hall," and became the college commons, was built, one perceives, as the residence of a local magnate, and furnished with the correct Grecian portico, which was the appendage of obligation to such a residence throughout New England and the Mid-



Amherst College—The College Church (1871). Amherst, Mass. W. A. Potter, Architect.

dle States during the thirties and forties. It was, in fact, "the Boltwood mansion," and one infers that the "'Squire Boltwood" who built it in 1828 must have been the local judge. The original college buildings may seem to antedate it, since the Greek revival hardly began to bear sway in domestic building so early as 1827. But, in fact, there is another Greek temple over in Northampton authentically dated 1826, with an equally correct reproduction of the Ionic or the Erechtheum, and one suspects the same person as the designer of both. In the Amherst case, he is known to have been one George Cutler, who was graduated from Amherst in 1826 and at once became a "house builder." At any rate, there is no question that the present edifice "belongs." Equally does the president's house belong, originally a barnlike structure of no architectural pretensions or interest, but amplified and furnished with decorative features quite in keeping with the genius of the place and the institution.

It is to be remarked, however, that the fraternity houses at Amherst are by no means of so much architectural interest as at some other colleges. They have, for the most part, nothing distinctive. The fraternities seem to have taken counsel only of the local carpenter, who is by no means so trustworthy a guide as he was in the days when he was building, for example, the Boltwood mansion.

There are two examples of the Gothic revival. One is Walker Hall, which was built in 1871, when the Gothic revival was at its height, but, being burned down ten years later, was newly roofed and furnished with rather incongruous dormers in the then prevailing Romanesque, ignoring the effective combination of color in the wall below of a field of gray rock with wrought work of brown sandstone, in effect the combination which Richardson afterwards made so familiar. In the same combination, with the addition of a second tint of sandstone in the arches, is the "College Church," which is doubtless the most interesting and admirable of the buildings of Amherst. The variety of treatment which the exterior shows is overruled to unity, and, moreover, shows that it is not capricious, nor introduced for its own sake, but for the sake of a more specific expression of arrangement or construction. The interior has one striking novelty in the treatment of the capitals. These are not capitals in the ordinary sense. There is no "bell," and hardly any expansion of the shaft under the abacus. It is the abacus itself which is exaggerated into the capital. The church is very successful in composition and in detail, a very pretty and picturesque thing, and one of the chief possessions of Amherst.

# THE EVOLUTION OF ARCHITECTURAL ORNAMENT

## VIII.

### Ornament With a Linear Basis

G. A. T. MIDDLETON, A. R. I. B. A.

One would naturally expect to find that whenever the human race was in an elementary state of civilization any attempts at ornamentation would take lineal forms. This has not always been the case, for there are many instances where primitive people have attempted to represent the natural forms around them before they have adopted other systems of ornamentation; at any rate natural forms have been developed into the most common and most beautiful rnaments, as has already to a certain extent been traced. At times primitive rectilinear and curvilinear forms have asserted themselves strongly, and have even been developed into something which is far from primitive. The origin of most of these forms cannot be traced. There seems to be nothing more in them, in many instances, than a desire to enrich a surface by straight and curved scratchings, or to decorate an edge by hacking away a series of notches, just as a boy cuts a stick. However this may be, at all periods of which we have cognisance there has been an occasional tendency to employ decoration of a linear character, and this without the forms of a later period being evolved from those of an earlier. It is as if the same forms have naturally commended themselves to the peoples of all times. The difficulty of classification is, consequently, considerable, for although the distinction between rectilinear and curvilinear forms naturally suggests itself, it is found that they are often used in close conjunction and simultaneously.

Of rectilinear forms the most prominent types are the zigzag, the key (or fret) and the trellis.

How retentive these forms are may very well be illustrated by the zigzag. Fig. 176 shows one of the columns beside the entrance to the Treasury of Atrens at Mycenae, as it now stands in the British Museum. The whole of the principal ornamentation here is based upon a series of shallow zigzag sinkings on the surface, bordered with bead work and separated by another set of zigzags, on which there is a scroll pattern. This pattern we may leave for the moment, merely noting the general principle of the ornamentation, as found here upon a column of very early Greek date.

Examples of this zigzag ornament were extremely rare in classic times, but they revived again in the comparatively elementary period of the English and Continental Norman, and even a little earlier. An illustration (Fig. 177) is given of a nook shaft in the doorway of Paddlesworth Church, Kent., which belongs to the 11th century, shortly before the Norman Conquest. It is therefore Saxon, and so far as can be traced of Scandinavian origin, yet the system of ornamentation is exactly that of the elementary Greek work at Mycenae; a little more crude perhaps, but the same in its essentials. A far better known example, something like a hundred years later in date, is to be found on the nave columns of Durham Cathedral. Exactly in this position, however, the zigzag ornament is rare, but it became extremely common in Norman times as an arch enrichment. An example is shown in Fig. 178, and others have previously been illustrated in Figs. 81 and 83. This belongs to the middle of the 11th century and is merely typical of a very large amount that is to be found throughout England, and to a lesser extent in Normandy and also in Picardy. It seems as if this may have developed from the

notched stick, though another idea, somewhat more far-fetched, has been promulgated that it represents hemstitch, this being consistent with the theory that almost all Norman enrichments of linear type can be traced to needle work. To an architect, however, these are vain speculations; the great thing is that the enrichment is found to have existed in far distant lands and very different

Fig. 176. Column at Entrance to Treasury of Atreus.

dates, and that it is one which is capable of being used with considerable effect, and of being varied to suit circumstances and applied to architectural work of different types.

When the zigzag next appeared it was again at a time when designers were thrown back to a certain extent upon their own native ingenuity. It is found in the cut brickwork chimneys of the English Tudor period and in the similar cut brickwork of Belgium of the same date. A somewhat late example is given in Fig. 179, which shows a portion of a stepped gable in what was till lately the Hotel de Grand at Ypres.

It might naturally be thought that the trellis pattern was a development of the zigzag, considering that it is but a coupled zigzag, but it is doubtful if this is the case. It is a form of ornamentation which belongs essentially to the Norman period and has more the appearance of having been derived from needlework than any other enrichment, passing, as the strands often do, over and under one another alternately as if to suggest a coarse canvas. Even when this is not the case the effect is much the same. One of the most pronounced examples known is illustrated in Fig. 180, the trellis pattern being carried over the whole face of one of the transept gables of St. Etienne, Beauvais. It was not a particularly common ornament, but of all those of Scandinavian origin it was the one which survived the longest in Gothic

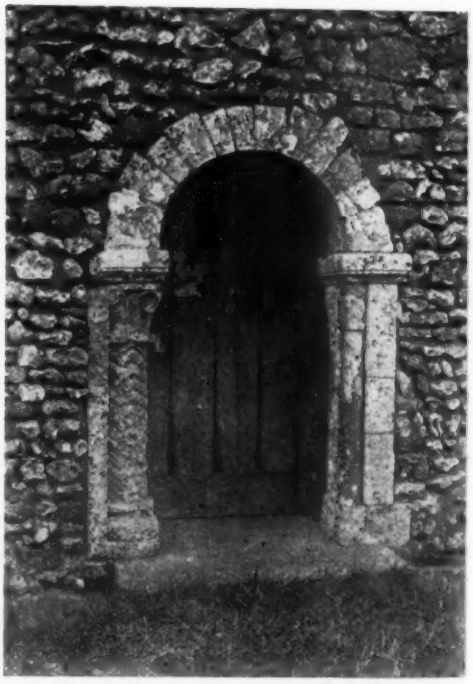


Fig. 177. Doorway, Paddlesworth Church, Kent.

Fig. 178. Church Doorway, Salford Prior, Warwickshire.

times, recurring now and again throughout the whole period, particularly in smaller work, as exemplified in Fig. 181, which shows the upper part of a shaft on

Fig. 179. Stepped Gable, Hotel de Gaud, Thres.

a 15th century tomb in Westminster Abbey. Another example has already been illustrated in Fig. 163. It was even retained throughout the earlier years of the English Renaissance; at any rate it crops up now and again in Elizabethan tomb work.

One would think that ornamentation of this description was not capable of great development, and possibly Indian work, such as is shown in Fig. 182, had an entirely different origin. It is difficult indeed to discover how rectilinear surface ornament passed first to the

Fig. 181. Enriched Shaft on 15th Century Tomb. Westminster Abbey.

Moors of Southern Spain and Northern Africa, and then gradually across to India, where it has survived to the present day. There may possibly have been some connection with what we know as Norman ornament, for the Normans occupied Sicily.

Most Byzantine surface mosaic work is curvilinear or else based upon foliage forms, but there is still a small amount of it which is designed in straight lines—much as is the wall decoration from the tomb of Eduand-Duala at Agra (Fig. 182), obviously well-

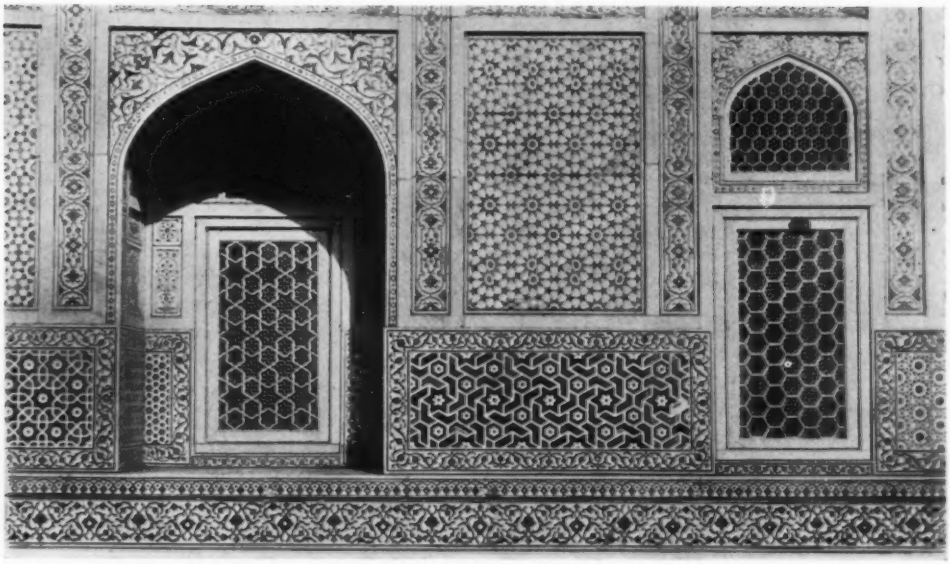


FIG. 182. TOMB OF EDUAND-DUALA AT AGRA.

suited to execution in mosaic. That the general suggestion of the whole of this surface is Byzantine goes a long way to support the theory of Byzantine origin of the detail, which has a mazy intricate appearance until it is resolved out into its simple elements, but is then found to be upon a comparatively simple basis.

Another well known rectilinear pattern is the Greek "fret" or "key-pattern" which is cut into the flat surface of the moulding shown in Fig. 183, a mere fragment of which was discovered near the S. E. Anta of the Erechtheion at Athens, and is now in the British Museum. This consists entirely of horizontal and vertical lines, and, simple as it is, it is capable of a certain amount of variation. In this particular example it is worked round a square block, but this is by no means always the case. It was a favorite surface ornament for color and mosaic decoration, particularly during the Classic period, but it seems to have been resuscitated, like some other Classic rectilinear forms, in English Norman work. An example has already been illustrated in Fig. 153, where it occurs as a horizontal surface enrichment in the interior of Barfreston Church, Kent.

The square blocks shown in Fig. 183 are themselves enriched with a star-shaped rectilinear pattern. Exceptional

Fig. 180. Transept Gable of St. Etienne, Beauvais.

Fig. 183. Moulding Found Near Athens. (British Museum.)

as it is this is of extreme interest, considering the tendency for the revival of classic forms in Norman times. Something of the same sort appears in Fig.

Fig. 184. Continuous Fret Pattern Mantel Shelf Edge, Langley Park, Kent (1800 A. D.).

178, where in two places a star-shaped sunk enrichment of an elementary type is to be seen, in the spandril over the doorway and again in the abacus above

Fig. 185. Guilloche on Door Jamb, Venetian Palace, Rome.

the capital, which is cut into the form of "nail heads," as they are called, these being closely allied to the star-shaped pattern shown in the Greek work of Fig. 183. More will be said about this in the next chapter.

There is a curved form of the key pattern which is by no means uncommon; the example given in Fig. 184 from the edge of a mantle shelf at Langley Park, Kent, might just as well have been taken from many another piece of Roman or

Fig. 186. A Window of Hotel Lallemande, Bourges.

Renaissance work. It has apparently nothing whatever to do with the guilloche, an ornament which has been already alluded to in several previous articles.

Now the guilloche is one of the most important Classic enrichments. It is to be found at a very early date indeed; in its incipient form it has been seen in Fig. 5, where it occurs as part of the Assyrian Sacred Tree. This seems to suggest that it had a tendril origin, but pos-

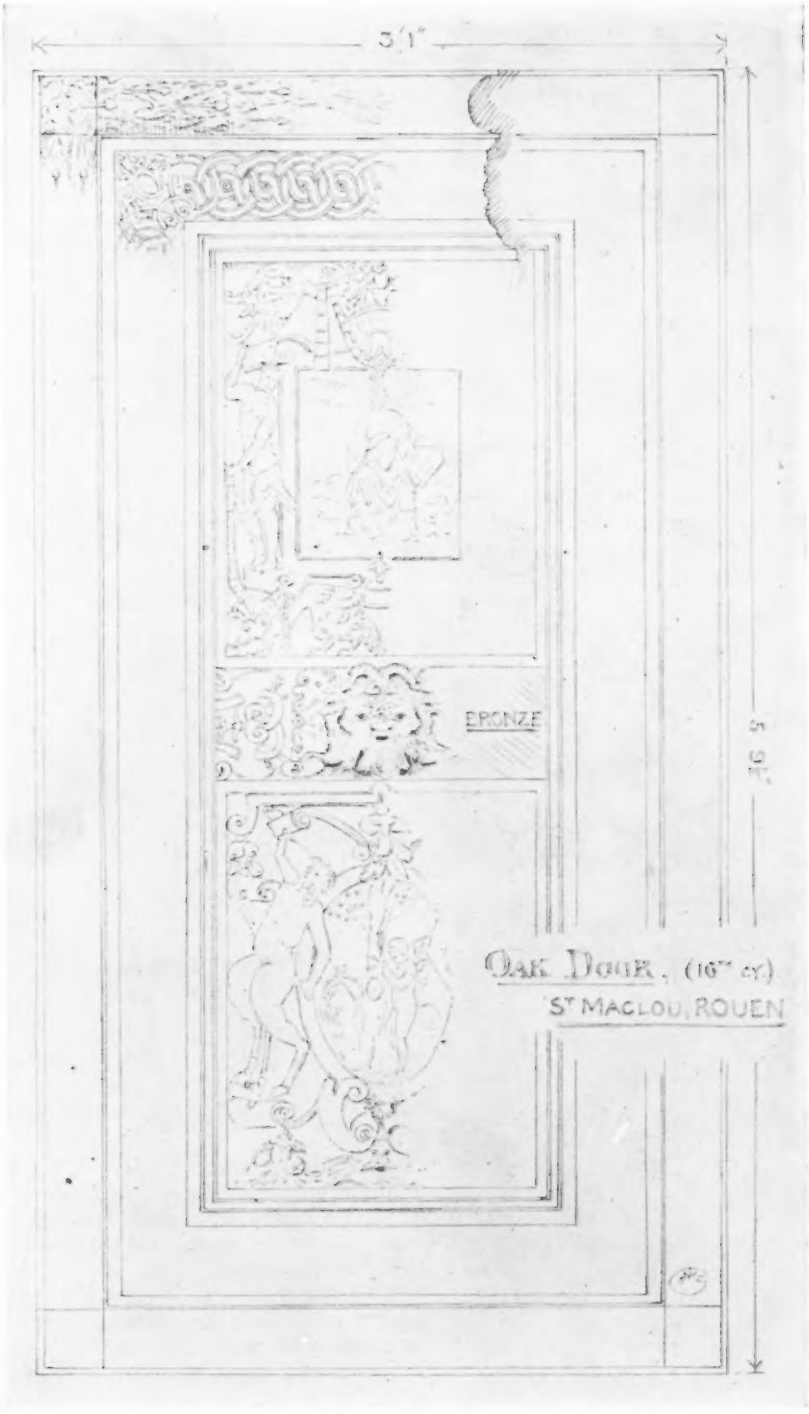



FIG. 187. OAK DOOR, ST. MACLOU, ROUEN.

sibly it is nothing more than a primitive effort to obtain decoration by means of curved lines. How this could happen is shown in Fig. 176, though what occurs there is more perhaps a development of the curvilinear key pattern than a true guilloche. The tendril or scroll is of a continuous form, such as can easily be made, and in fact often is made, with braid upon a lady's dress. The whole suggestion of the guilloche is greatly that of braiding. Owing to the way in which the moulding which is illustrated in Fig. 183 has become destroyed through exposure to the weather, it is easy to recognize that what was a complicated guilloche may have had its origin in the simple twisting of ribbon. As a general rule in the Greek form it is not possible, however, to trace how the various strands would run into one another, and this characteristic would have been more in evidence if the moulding had been less destroyed. Whenever the ornament was revived at a later period there was a more definite arrangement of the plait, as if the subsequent workers thought that there was no doubt of the origin and worked accordingly. A simple but quite typical example is shown in Fig. 185; it is of Renaissance date and shows a little piece of the door jamb of the Venetian Palace, Rome. The plait or guilloche is a single one, and not complicated as in most of the Greek examples. It recurs in this form in every country where Renaissance architecture penetrated; it can be recognized, for instance, in the window jamb of the Hotel Lallemande at Bourges, shown in Fig. 186, where it appears in combination with many other enrichments which have already been spoken about. It will further be noticed that the corona round the shell ornament above the window is enriched with simple rectilinear flutings which radiate from the same centre as the shell. This window, though it occurs in mid-France, has every sign of being of Italian workmanship, not merely in the character of its ornamentation and general outline, but also in the fact that it has been carried out in the black marble which is used so much in some parts of Italy and is rarely, if ever, except here, found in France. Much more typically

Fig. 188. Edward the Confessor's Tomb, Westminster Abbey.

French is the example given in Fig. 187. This is a measured drawing of the door of St. Maclou, Rouen, carved in oak,

Fig. 189. Base of Cable Enriched Shaft in Doorway, Shobden Church, Herefordshire.

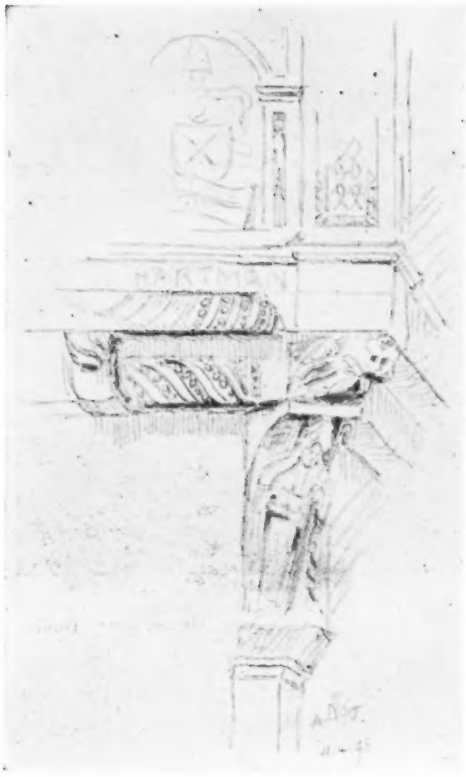


Fig. 190. Corner of Breiteweg and Schuh Strasse, Halberstadt.

by Jean Goujon about the year 1550, of which a photograph has been given in Fig. 66. The guilloche in this case is of a larger type and more complicated; it is worked round a single row of eyes and the plait is quite continuous, as in most Renaissance examples.

How far the Byzantine plait or strap enrichments can be traced to the guilloche will probably never be determined. How similar and yet how different the two are can be seen by comparing the small ornaments of the periods just spoken about with the larger use made of this curvilinear ornament in Edward the Confessor's Tomb, Westminster Abbey which, though erected in England in the 13th century, is a purely Byzantine example, exectly similar in character to a good deal that is to be found in the East. It will be seen that in one of the panels the pattern is entirely made up of a large guilloche, while in other places guilloche scrolls occur at the corners of a continuous pattern which has in all five circular eyes. It is one of the characteristics of the Byzantine scroll work of this type that the plait always returns upon itself, so that there is no end to be discovered.

It is a disputed point in connection with the archæology of ornament whether the Byzantine scroll was the origin of the Celtic or Scandinavian, as it is exemplified on the column from Shobden Church, Herefordshire, illustrated in Fig. 189; but the present tendency is to believe that this was entirely distinct, coming in with the other Scandinavian enrichments and being based, like them, upon needlework and the intertwining of threads, or else upon

Fig. 191. Pilaster on South Front Hatfield House, Herts.

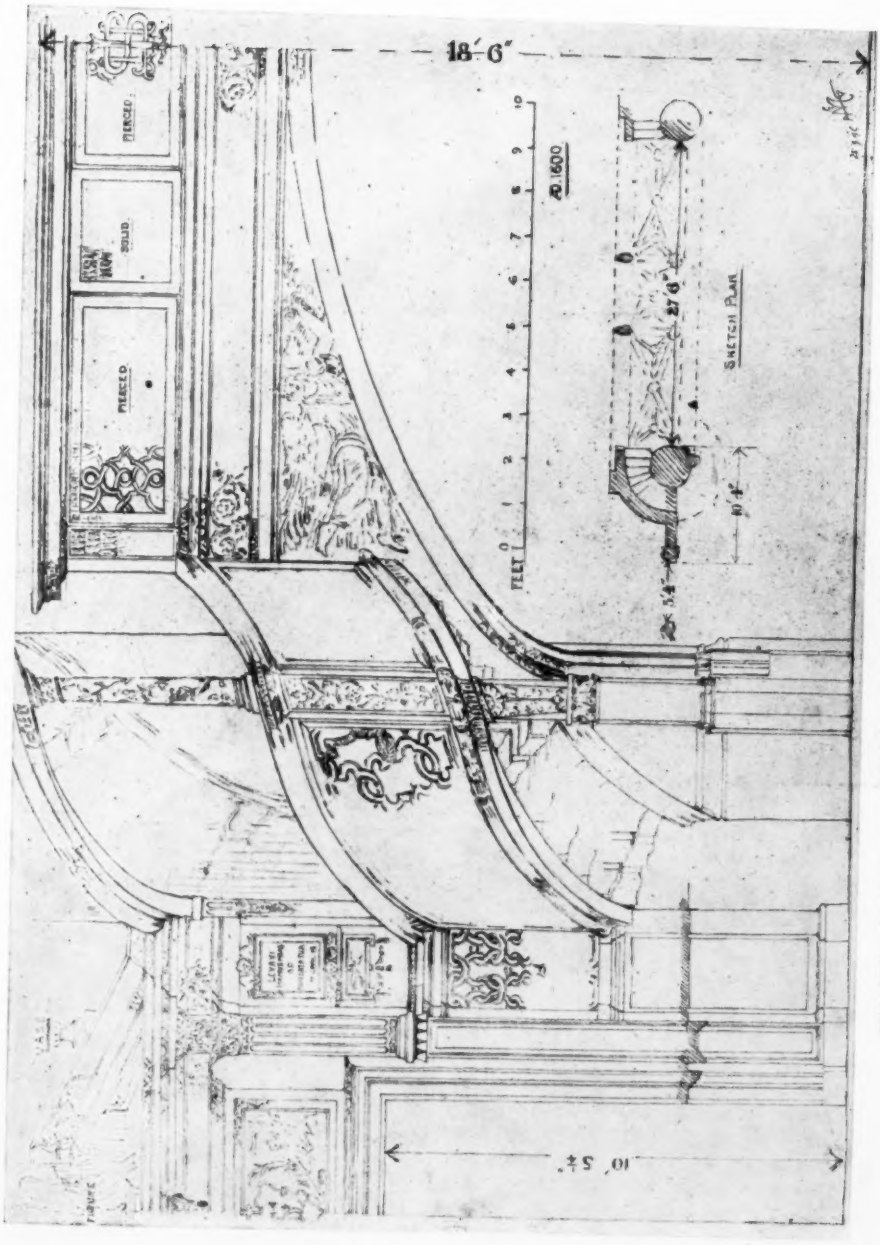



FIG. 192. STAIRCASE OF THE CHURCH OF ST. ETIENNE DU MONT, PARIS.

the twisting of wires, as in some forms of Scandinavian jewelry. In this example the appearance is suggestive of twisted rope more than anything else, but it is an extreme example, most of that of earlier date, of which there is a considerable amount to be found on Saxon crosses, being comparatively flat.

This ornament belongs most probably to the cable type, of which a simple example is illustrated on the same drawing in the upper roll of the base. It is quite common in English Norman work, in the way that is to be seen in the column at Salford Priors, Warwickshire, shown in Fig. 178. But again it is not unknown in Byzantine work; the columns of Edward the Confessor's tomb (Fig. 188) display it in an exaggerated form. It

**Fig. 193. Rood Screen, St. Etienne du Mont, Paris.**

is, when one comes to think of it, rather an anomaly to stand the representation of a twisted cable upright as a column to sustain a load, and the absurdity becomes very apparent indeed when the twist is of the character shown in Fig. 188. Used horizontally, however, the ornament is quite a reasonable one, and it seems to have been generally accepted and to have been employed over a long period in one country or another, not perhaps so much in true Gothic times as to have revived again with the introduction of the Renaissance, particularly in German woodwork, of which there is an example given in Fig. 190 from the overhanging beams of a house at the corner of Breiteweg and Schuh Strasse, Halberstadt.

Reverting to ornament of the guilloche or braid origin, one finds that it was revived in the Renaissance period,

**Fig. 194. Portion of Panel from Door. (Victoria and Albert Museum.)**

and most prominently in England, where it appears as a twisted ribbon or strap ornament in Elizabethan work. The example given in Fig. 191 is from Hatfield House, the seat of the Marquis of Salisbury. The large window openings within the arches are filled with guilloche stone tracery. This is not very beautiful, as indicated in the very slightest manner in the sketch, but the lower parts of the pilasters are enriched with low relief strap ornament, entirely characteristic of the later Elizabethan period, carved upon the face of the stonework. There is a suggestion about it of fret-work or flat pierced metal which has been nailed on to the surface behind, but as a matter of fact it is always cut out of the solid, the background being recessed to a level surface, and this whether carried out in wood or in stone. It will be noticed in this example, which may be taken as perfectly typical, that the curves are almost always those of the capital letter C, showing a certain poverty of design, and that these curves are connected by straight lines with the occasional use of circles. The date of the south front of Hatfield Houes is 1611 and at about the same date

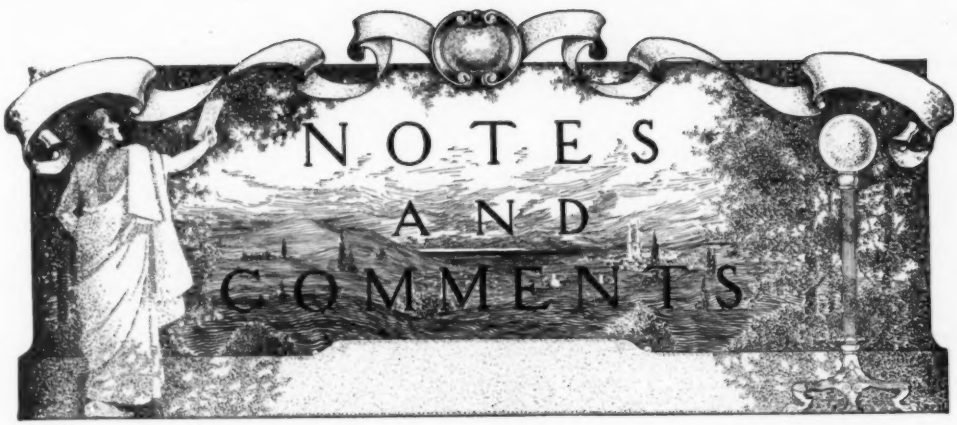
FIG. 195. A STREET CORNER IN MAINZ.

ornament with a similar basis appeared upon the Continent, differing considerably, according to the country in which it was found. Figs. 192 and 193, respectively a measured drawing made on the spot and a photograph of the road screen and staircase of the Church of St. Etienne du Mont, Paris, display a great deal of this enrichment, difficult to distinguish as to the detail in the photograph, though perfectly clear in the drawing, while the photograph gives a better idea of the general effect of it. The ribbon is not necessarily endless, and in fact there seems to have been little rule with regard to it except that of obtaining a pleasing design in curved lines, suggestive of a twisted plait. This class of enrichment more than any other goes to distinguish the Renaissance detail of western Europe from that of Italy. It seems to have been based upon nothing which existed previously, but to have been naturally devised; it gives the impression, in conjunction with the fact that a similar ribbon ornament appears in the same district in Norman times, that it is indigenous to the peoples of that part of Europe, and that in fact whenever they have been thrown back upon their own resources for ornamentation they have naturally adopted something of this sort. In the course of a century it developed in France into such forms as are shown in Fig. 194, which indicates how foliage was attached to a strap-work basis.

Fig. 196. A Doorway in Hanover.

What happened in Germany was quite different; unless, indeed, the English C curve may be taken to have been the basis of the development. The street corner in Mainz, which is illustrated in Fig. 195, is typical of a great deal that is to be found, though unfortunately it has been vanishing somewhat rapidly during the last thirty years. Where the owners have appreciated its value it has been taken care of, and in many instances is colored and gilded, but in other cases it is to be found covered with whitewash and scarcely distinguishable from the rest of the white houses in the streets, and under such circumstances as these it is apt to fall into neglect and eventually to be swept away amid modern improvements. The same sort of strap ornament, no longer in continuous bands but in isolated volutes, is found in much smaller detail also. A somewhat elaborate example, a well-known door way in Hanover, is illustrated in Fig. 196, where the straps are inconsequential; there is, in fact, little design about the ornamentation but the effect is at any rate rich and complicated.

This illustration also shows another form of lineal enrichment about which it would be possible to write a great deal, namely, that obtained by the use of lettering. It occurs here in the frieze over the doorway and indicates excellently how texture can be secured by such simple means.




**THE LONDON TOWN PLANNING CONFERENCE**

It is difficult to put one's finger on just what constitutes success at a convention. But it is the general testimony of those who attended the Town Planning Conference that was held in London in October, under the auspices of the Royal Institute of British Architects, that it was exceedingly successful. Certainly it had nothing to fear from the tests of attendance, sustained interest, and extraordinarily efficient management. Fifteen hundred delegates were present, representing nearly all the countries of Europe and Australia, Canada and the United States, and doing this for the most part in the person of the foremost town planners of those countries. The program, which was very rich, was precisely carried out. Of itself it makes a considerable pamphlet. The three exhibitions, which were a feature of the conference, were ready at the opening hour, each with its complete printed catalogue, and the eighteen excursions which were offered for the choice of delegates were carried through without apparent hitch. Each meeting, excepting only the opening session at the Guild Hall, commenced exactly at the hour announced, and the fifteen minutes' delay of the one exception was due to guests; no reader or speaker was suffered to exceed the announced time limit; and the discussions, though necessarily briefer than could have been wished, were well handled. No resolutions were adopted, and it is not easy, therefore, to find a tangible measure of the results; but this omission of resolutions was the policy announced in advance. And one very definite, though local, result is to be found in the educational effect of the conference. This embraced, popularly, three lessons: The importance of town planning, its technical character, and the proper connection of architecture with it. The chairmen of committees united in giving the main credit for the completeness of the conference arrangements to John W. Simpson, F. R. I. B. A., the Secretary-General; but it was clear to the delegates that there must have been a great deal of loyal and efficient service on the part of those very chairmen. It only remains to be said that the Patron was the King; the Honorary President, John Burns; the President, Leonard Stokes, as president of the Institue, and that Sir Aston Webb was chairman of the Executive Committee.

THE PROGRAM.

The conference opened Monday morning, October 10, when President Stokes received the members informally in the "great gallery" of the Institute. At 12.30 that day the principal exhibition was opened, at the Royal Academy, with short addresses; at 3.30, in the historic Guild Hall, the inaugural meeting was opened by the Lord Mayor, in all the dignity that quaint trappings, sword bearer and mace bearer could give; and here John Burns, president of the Local Government Board and author of the English Town Planning Act, delivered an hour's address that proved one of the most interesting of the conference. In the evening there was a reception for the delegates at the Institute. On Tuesday morning the conference settled down to business, and from that time until Saturday, there was one big, general meeting every morning; two simultaneous sectional meetings in the afternoons, together with a choice of excursions to see town planning work in the "garden cities" and elsewhere. In addition to this full program there was a banquet at the Hotel Cecil Wednesday night;

a reception by the American ambassador Thursday afternoon, at his residence; a reception by the Lord Mayor Thursday evening at the Mansion House; and stereopticon talks on town planning at the Institute on the other evenings. It was notable that the two Americans who presented papers were honored by places on the morning programs, when the attendance was so great that after utilizing every inch of available standing room in the great gallery, large overflow meetings were held. Saturday was entirely given up to excursions, one party going as far as Liverpool, to visit Port Sunlight. These excursions, and the innumerable little luncheons and dinners that took place through the week, did much to foster that personal contact which is often the most valuable as well as the pleasantest feature of such a convention.

THE PAPERS.

No adequate summary can here be given of the many papers which were read. They will be published in full in the proceedings; and complete proofs of them (with translations into English of those in foreign languages) were available to the delegates on request each day, as they went in to the meetings. This arrangement greatly facilitated the discussion and enjoyment of the papers.

On Tuesday the general subject of the morning was "Cities of the Past. The papers, which were in part illustrated, dealt with town planning in ancient Greece, in the Roman period, and during the Renaissance of the sixteenth and seventeenth centuries. Of the afternoon papers one was by Professor Geddes, on his familiar theme of "The Civic Survey"; and others dealt with legal aspects of town planning. Wednesday morning's general subject was "The Cities of the Present," and doubtless because of that it was the session which left the deepest impression on the conference. The first paper, by Professor Baldwin Brown of Edinburgh, was a strong plea for the "preservation of ancient features" in town planning. He had little sympathy for the iconoclastic city planner who yearned for a "clean slate" that he might make designs untrammeled by the past. "Cities," the speaker remarked, "are not only made, but grow. . . . Furthermore, the growth is conditioned not only by physical but by human environment, and is closely dependent on history." To wipe out that history's evidence may be to take away more than the town planner can give; and he pointed out how the two old London churches, St. Mary-le-Strand and St. Clement Dane, which town planning schemes had threatened with destruction, had now became, under better advice, central features of a most successful street improvement. The reception of Professor Brown's paper showed that the huge audience was in full sympathy. The morning's second paper was by an American, and as the Record has elsewhere given it in full it need not be here commented upon. Its argument on the folly of standardizing street widths, and plea for permission to narrow strictly secondary thoroughfares, struck so responsive a chord, however, that a week later "The Westminster Gazette," in comment on the thesis of the conference, gave first place to this. In the morning's discussion which followed it, a statement by Thomas Adams, of the Local Government Board, that he would favor an amendment to the English by-law which now imposes a minimum width of forty feet on every street, was received with cheers. The third paper, delivered in French by M. Bonnier, architect in chief of the city of Paris, described the architectural restrictions with which Paris has attempted to preserve the historic charm of certain squares; and the final paper, by H. V. Lanchester, was a consideration of "Cause and Effect in the Modern City." Ideals, he argued, even though they be crude and base, may be more influential in determining a city's development than are material factors, and hence town planning is not to be undertaken only from the economic standpoint. The duty of the architect is to encourage true, high, artistic ideals, his technical training giving him power to discriminate, and in town planning the idealist is needed more than is the theorist. He thought half the building laws were based on traditional ideals, rather than on real necessity. Sir Aston Webb, in closing the discussion of the papers, strongly endorsed Mr. Lanchester's views. Seen things, he pointed out, were temporal; unseen were eternal. Cities that were beautiful would last; those that were ugly would be pulled down. He thought that the architect should take a more prominent place than he had done in town planning. In the papers of the afternoon, a tentative plan was put forward for a girdle road around London, the strip to be purchased to be a quarter mile wide, so as to furnish ample building sites, and sixty miles long; a plea was made for the restriction of advertising, especially in the garden cities; and an account was given of fifty years' town planning progress is Sweden. But the Wednesday afternoon paper, which is of most interest to American architects, was by Professor S. D. Adshead, of the department of civic art at the University of Liverpool. Professor Adshead, who had lately returned from New York, described the modern English city as defective in scale, illogical in adornment, and lacking cohesion in style

when compared with the city of America, Germany or France. National style in architecture, he said, moved in cycles. In its rotation, purity and originality are always followed by pedantry and confusion. Just now England, he thought, was very near the bottom; whereas the United States, was "pretty nearly at the top." He thought the Pennsylvania Railway station, the Metropolitan and University Clubs in New York, the Boston Library and the Bank of Montreal "perhaps as good as anything Italy and Rome could show." London, while the metropolis of the world, hardly deserved in the scale adopted for its architecture to rank with cities of secondary worth. The scale showed a miserably poor appreciation of the relative importance of the city. The new Ritz Hotel and Selfridge's store were promise of a change; but the usual small Carnegie Library included in its facade, such was the ambition of architects, "more features of importance than the British Museum," and the provincial town hall combined in one small structure "all the features of Greenwich Hospital, Whitehall and Hampton Court." On Thursday morning Mr. Burnham of Chicago, occupied the chair. The general subject was "City Development and Extension." Raymond Unwin, the garden city architect, presented the first paper, illustrating it with slides. An incidental reference to American skyscrapers, which he allowed the Flatiron Building to represent was far from complimentary. W. E. Riley, architect of the London County Council, cited London as one of the most costly examples of the lack of foresight in town planning, and called attention to the amount of labor and thought which had been devoted to the subject there, and yet the negative results that had been realized. Other papers were by M. Rey, urging sanitary considerations in the building of cities; by Dr. Stubben, on recent progress in Germany; and by Dr. Eberstadt, on the Greater Berlin Competition. The papers at both afternoon sessions were largely devoted to parks, gardens, and open spaces, and the proposal of radial parks, so frequently illustrated in America, was received with great favor. The general subject for Friday morning was "Cities of the Future," and at this session the second American paper, that by D. H. Burnham, was given. The session opened with a paper by Professor C. H. Reilly. "We have all built," said he, "or most of us have, Queen Anne houses, Georgian houses, Cotswold farmhouses, or stone-slated Welsh cottages for the modern suburb, and if we have had the courage to admit it to ourselves we have found them not a little ridiculous when finished, furnished by Maple's and inhabited by our stock broker friends." He questioned whether garden city architecture, though good of its kind, was of the right kind; and he pointed out that the beauty of many an old neighborhood lay in its harmony and appropriateness. The *laissez faire* method of town building had proved in the last half century both its hideousness and its wastefulness, and he looked forward to a time of greater organized control, in architecture as well as in street platting. "To introduce," he said, red bricks and tiles into an essentially grey town like Edinburgh, or into a white town like Paris, is to do an injury to the whole, which the town as a whole should resent." M. Henard, in discussion of the city of the future, proposed the building of streets in double levels or tiers; and Mr. Burnham pointed out the promise of democracy. A plenary democracy such as that of the United States, he claimed, could realize any physical possibility that it thought desirable. He thought there was no more convincing proof of society's advance than the absorbing modern interest in town planning, and it was significant, when contemplating the municipal improvements of the last sixty years, to realize that "to-day we are more dissatisfied with our surroundings than our grandfathers were with theirs." The final paper was by L. Cope Cornford, and pointed out that the layman, and he alone, must confer upon the artist that freedom which could bring into being the ideal city of the future. The two afternoon sessions of Friday were given up to the consideration of concrete schemes. Of these the most important was the planning of Khartoum, which was described at a meeting over which Lord Kitchenor himself presided.

Thus it will be observed that while the papers covered a wide range of subjects, there was a certain logical progression about their arrangement that gave unity to the program and did much to sustain the interest. This was further enhanced by the three admirable exhibitions connected with the conference. That at the Guild Hall was a collection of maps, prints and drawings, the property of the corporation of London, showing the city's historical development. That which occupied the second floor of the Institute was the Institute collection; while at the Royal Academy there was shown the greater part of the remarkable German town planning exhibition shown in Berlin in the spring and later in Dusseldorf, to which were added Professor Geddes' Edinburgh Survey, occupying an entire room, and many English, French and American exhibits. Among the latter were Burnham's Chicago plan, the Washington drawings, and the plans of the Improvement Commission of New York City.

# CITIES OF THE PRESENT*

## As Representative of a Transition Period in Urban Development

### (The Evidence of Standardized Streets)

By CHARLES MULFORD ROBINSON

The city of the present is the town of the past at, generally speaking, an ungainly age. In the olden days, when, as we look back, we see shining upon it "the light of early morning and the naivete of childhood," it was pre-eminently picturesque. The picture still delights the artist spirit in us.

But we know now that in those days the town was neither very wise nor far sighted, nor was it industrially productive. To be sure, it was a sturdy young fighter, against foes of its own kind; often it mischievously made a noise in the world; generally, too, it was light-hearted. It was, in truth, a real child-city, playing well, fighting well and, when tired, sleeping well. Indeed, like a child, it was prettiest and most picturesque when it lay asleep. Here and there, we discover yet one of the number that has not wakened, and we steal up to it on tiptoe to gaze at the little sleeper and sigh for civilization's childhood—for the carefree days of urban short frocks and tousled curls. Then work was an individual matter in the towns, while fighting, playing and sleeping were the occupations of the community. Now few can work for themselves. Labor is become the community interest, and the fighting, playing and sleeping are only individual or neighborhood concerns; and the cities, granted spaciousness, have been systematized and standardized.

So the towns of to-day may be fancied as of long legs and arms, with hair slicked down, and faces grown sad and serious. They have become poor fighters but great workers; their sleep is fitful and restless. They are the embodiment of a wealth producing energy; and they have lost the joy of life. Their frames are not fully developed for the work they try to do. Thus are they pathetic figures—prematurely aged, unnaturally slow—lacking the efficiency that we must hope will come with years and with fuller development. To-day the cities are illustrative of child-labor, straining against physical handicap, rather than rejoicing in their strength for labor. That is not right. We city doctors have no greater duty than to develop these half-grown child-cities into man-cities, fitting them for the men's work they are so feverishly attempting to do, that they may do it the more easily and at a human and economic cost less frightful.

The city of the present, bearing strongly the impress of the past, is ill-adjusted to new conditions. Let us take as illustration one very simple, though very important, matter that is within the memory of us all. Not in the picturesque mediaeval city only, but in the city of our own remembrance, it was necessary that the workman live near his work. That necessity in passing. It now applies only to the laborer who is most poorly paid—the push cart vendor and the sweat shop worker are examples—and, in less degree, to those whose labor calls them to work at unusual or uncertain hours—as, for example, dock handlers.

Nowadays, architects and lawyers may have their office in the city and their home in the outskirts; merchant and banker and broker may sleep in the country though their labor is in town; in multitudes the more progressive clerks and salesmen and their families occupy the long rows of detached and semi-detached dwellings that make up the outer residence zones of cities; in the early hours of the working day and again at its closing hours, the trams and subways are crowded with lunch-box ahd dinner-pail bearers—with the great army of the employed, journeying to and from their work—riding, because they live too far away to walk. This is the triumph of the modern city. It has come with the quickening and cheapening of urban mechanical transportation. It is the relief which has been developed as a blessed offset to the increasing pressure of modern industrial and commercial activity. At last it has become possible for the citizen to get away from work. Thousands of men, to be sure, still go to bed over their shops, still sleep within call of the factory whistle; but other thousands, in a throng that grows with astonishing rapidity, considering how radical the domestic upheaval involved, now have daily change of scene and air, entering at nightfall into a

*Note.—Paper read by Mr. Robinson at the London Town Planning Conference.

peace which industry and commerce may not molest.

Obviously, this is a social readjustment of incalculable value. But it has expressed itself very inadequately on the city plan. Though business sections and home sections have become divorced, and consequently have developed entirely different traffic requirements, yet, generally speaking, the street plan has remained unchanged. And even these great divisions have developed various characteristics of their own, so that they, in their turn, may be subdivided into distinct districts, as far as the true requirements of lot-size and street-capacity are concerned. But still we keep streets mostly uniform in width and we standardize the unit of lot. Rapid transit railways have been created, but they must seek the suburbs by thoroughfares that have scarcely changed in character in hundreds of years. Indeed, the centuries have brought only one marked change—and that, which is the wholesale widening of streets in the cities' newer parts, is really of questionable value. Thus the average city's layout may be said to make scarcely any recognition of the tremendous social change which has come with the laborer's wish to live away from his work and his recently acquired ability to do so.

Adequate recognition would involve two groups of changes, and these, when made, or if made, must definitely differentiate the city of the present from the mediaeval town and even from the city of the last century. These changes would be, first, the provision of long, straight, broad radial highways of easy gradient. Such thoroughfares, shortening time and distance to the outer zones, would facilitate the daily ebb and flow of travel and would increase the area available for home building. Second, the changes would involve a rearrangement of minor streets, adjusting them to the needs of the sections which they serve, largely new needs in home sections.

A representative of a republic may regret, as menacing pure democracy, the subdivision of home sections into districts of various character. But the condition is one that must be recognized. We may see it in any city to which we journey. It is evident in Chicago as it is in London. It is the result of the operation of social laws—nay, of laws embracing more than human society. It is the attraction of like for like. Further, it is a delayed working out for cities of that law of evolution described as the specializing or differentiation of function. Whether we like it or not, we cannot in fairness fail to recognize its operation in cities and to perceive that the process will continue and grow more marked. Already business sections are subdivided into wholesale and retail, and these again subdivided into the "street of the jewelers," the "automobile row," the "leather district," the "financial centre," etc. Already residence sections are subdivided into high class and middle class and working men's districts. And between the business section and the residence section there has grown up a tenement section, having some of the characteristics of both its neighbors. The Germans, students as they are, have recognized these laws to the extent of applying the so-called zone system to their city planning. But even with them the zone's adaptation to function is more of an architectural than an engineering matter. In the city of the present, in any nation, there is to be found a street arrangement which is generally uniform although it is intended to meet totally unlike needs.

How unlike are the needs of various sections must be obvious at a glance. Contrast the traffic requirements of a street in the business district, a street in a laborer's residence district, and one in a region wholly given up to villas in spacious grounds. On cramped Manhattan Island, New York, where ground values are enormous, one may find, I dare say, in the wholesale district, in the congested East Side, on a fashionable avenue and among uptown tenements, streets that are identical not only in width but in area of sidewalk and of road space. Yet, in the first, there may be fifty great trucks and drays to a single pedestrian; in the second, five hundred pedestrians—push cart men and others—to a single vehicle. The streams of people on these sidewalks overflow into the "roadway" and choke it to such extent that one could hardly drive there if he would. But on the avenue the river of traffic is mainly composed of motor cars and carriages, and such a mighty torrent is it that the hunted pedestrian can cross it only as the Children of Israel crossed the Red Sea, a Moses in uniform holding back the waters on either side. And then the uptown tenements. Among them the city has been actually closing some streets to vehicular traffic between certain hours, because inconsequent childhood has appropriated the street as a needed playground!

Great as are the contrasts, the problem has been reduced in this statement to its simplest terms. I have taken no account of the difference between streets that have and have not car tracks, though in other respects they be alike; no account of grades, and length, of direction with respect to the tidal flow of traffic, of terminals, cross streams, and other matters which affect the

usefulness of streets. But even all these conditions would not illustrate all the folly of a standardizing system. There are other streets, scores and hundreds, on which, though they are uniform in size with thoroughfares as crowded as those described, there will be perhaps two vehicles and half a dozen pedestrians in the hour. The pathos of this is the waste involved.

In the built up portion of most cities of the present, the area devoted to streets is from twenty-five to forty per cent. of the total. In mediaeval cities, it was frequently about ten per cent. Recognizing a new requirement, we have raised the proportion; but we have done this in a uniform, unthinking way. We have made the ridiculously impossible attempt to imagine an "average street," and then, having guessed at a width and arrangement that would be theoretically suitable for this, we have sought to save ourselves trouble by enacting legislation to standardize it.

To illustrate concretely, let us take the Borough of the Bronx, New York—a region of delightfully varied topography, and illustrating within its considerable area almost every kind of suburban development. Yet here a general ordinance dealing with the arrangement of streets, requires that all streets sixty feet wide shall have a 30-foot roadway, all streets 80 feet wide a 42-foot roadway, any street 100 feet wide a 60-foot roadway, etc.—without regard for any characteristic of the street, save that of width. For example as to the other aspect of the matter, one may turn to the city of Washington, which we like to think of as so admirably planned. There a law requires that all new streets shall be not less than 90 feet in width.

Consider the economic loss involved in such "mechanical standardizing"—an evil of which the United States has no monopoly. In fact, Mr. Olmsted, summarizing his observations on a city planning trip in Europe some months ago, remarked that such standardizing was to be found "in not a few quarters of European towns, perhaps most noticeably in England." Mr. Raymond Unwin, in his most admirable work on Town-Planning, gives a forcible illustration based on English procedure. He says: "A mansion such as Chatsworth or Blenheim will be adequately served by a simple carriage drive from 13 to 20 feet wide. The population of such a building will be larger than that of a row or group of cottages, and the amount of wheel traffic to and from it many times as great; yet for the cottage road asphalt or concrete paved footpaths, granite kerbs and channel, and granite macadamized surface, the whole from 40 to 50 feet wide, and costing, with the sewers, etc., from £5 to £8 a lineal yard, are required by the local authority under our existing by-laws."

The economic loss that results is of two kinds, and it is all reflected in the rent. In part this loss is represented by the actual municipal outlay for the paving and maintenance of the unnecessary street space; and in part it is represented by the increase in rent traceable to the amount of building land taken out of the market in order to supply the needless street space. It may be well to quote figures, as generally the connection has not been thought out: In the Richmond (Eng.) housing scheme, "taxes and insurance" are estimated to account for one-fifth of the rent of a six-room cottage. "Housing-Up-to-Date," that valuable compilation by M. W. Thompson, chairman of the National Housing Reform Council of England, states that the cost of roads, sewers, etc., reaches in some cases as high as £9 per room, or £45 per cottage, and that it averages £9 per cottage. This calculation is based on statistics covering thousands of cottage dwellings, and since the word cottage means in this connection houses built in continuous rows—that is, dwellings that occupy with their grounds a minimum street frontage—it reveals the effect on rents for even the cheapest homes. As to the more costly villa type of dwellings, the same authority notes that the English by-law requiring a paved or macadamized road surface of about 40 feet for all except secondary streets, has made the cost of such thoroughfares, in newly developed estates on the outskirts of towns, from £200 to £500 per acre—"or more than the land itself."

If the statement that street widths and arrangement are too often standardized were not supported by common observation, it would seem incredible that any intelligent community would permit—much less demand—so extravagant and illogical a platting. It is as if a city's building ordinance required that every structure, whether or not of a public nature, if containing a certain number of cubic feet should be divided into rooms of a designated capacity—oblivious to the structure's possible use as a warehouse, an office building, or a cathedral; and further that no structure of less than a fairly average size—let us say two stories high and thirty feet wide—should ever be permitted within the corporate limits. If now and then, there being such an ordinance, an intelligent person had the bright idea of adjusting the size and interior arrangement of his proposed building to its intended use, he would have to secure—or with much effort

try to secure—a special act enabling him to depart from custom, just as now the tract owner may have to plead for the privilege of exercising common sense in the proportioning of minor streets!

The arguments with which we attempt to justify our system are interesting. They concern themselves almost exclusively with excessive width, as nowadays the case is rare of a standardized street which proves too narrow.

The commonest argument is that the system makes forehanded provision for the future growth of traffic. Now, this, surely, is as a voice from the little child-city of the past. Observe the process of reasoning: In that town there were narrow streets, for it was necessary to live close within encompassing city walls; then walls came down, the city grew and changed in character, and it was observed that the streets were too restricted for the traffic which modern conditions thrust upon them. We would profit by the lesson and so, with truly childlike perspicacity, we ordain that henceforth there shall be no street with width less than a certain arbitrary minimum. Generally, this minimum is as much too wide, considering traffic needs alone, as the old maximum was too narrow; therefore we require that a certain amount of the space be put in turf. With knowing look, we now call attention to the fact that should the thoroughfare—which possibly climbs a steep hill, or skirts an unnavigable watercourse, or a line of bluffs, or lies three or four miles from the business portion of the city, in a direction whither business cannot grow—ever does become a choked business thoroughfare, no future generation will have to widen it!

But Broadways, Fleet Streets and Cheapsides are not born full grown, overnight. In ninety-nine cases out of the hundred, it can be foreseen absolutely that given residence thoroughfares will never become business streets—or, if "never" seems too big a word, let us say will not become so within any reasonable period. Is it not absurd to charge the community through the intervening years with the annual cost of a hundred needlessly wide streets because there is a possibility that, perhaps centuries hence, one of them might have a much larger traffic than to-day? And as to the one case of which the future might not be accurately foreseen, the growing traffic, the trend of business and of building, or the undertaking of a public work that is to revolutionize the community, would give the warning in time to prepare for it. If we are going to be so thoughtful in our city building, let us be thoughtful of facts and not of theories. Let us observe, among other things, that the present tendency to develop districts, homogeneous within themselves but quite distinct from other districts, tends powerfully to the fixture of not only real estate values, but of traffic values. Then a street platting adapted to these districts will further discourage marked changes in their character.

The purpose of a street, be it observed too, is to afford means of communication. To say, therefore, as does a second argument, that the wider street than the traffic needs in a residence district is a good thing because the extra width is nice for something else—as grass and flowers, and air and light—is absurd, if those attributes can be more economically provided by other means. Would an architect justify the expense of putting extra staircases in a house because banister-rails are nice for boys to slide on?

On main thoroughfares, indeed, mere spaciousness of appearance is agreeable in itself—the more so because there it is suitable. But width being suitable on such streets, they would not be narrowed. On minor streets—by which I mean those non-arterial thoroughfares which are neither stately boulevards nor routes of urban railways, and which make up the bulk of any city's residence quarter—an aspect of coziness is, on the other hand, attractive. Aesthetically such streets gain nothing by excessive width. The grass and flowers, and air and light can still be had. Assuming that it is our right to force them on the community, we still could narrow any distinctly secondary street to such proportions only as the traffic really, all things considered, needs. For this would lengthen the abutting lots, and we might then establish a building line, in front of which no structure on a given street, or portion of street, should project. If the community still felt the need of forehandedness, it could secure an easement over those restricted spaces; the desired amenities would become attributes of the home rather than of the street, and better so; while as to provision for shade trees, on a narrow street these are better inside the walk than outside.

We may note the inconsequence of making footpaths almost always double on a street—no matter how little walking there may be; or of making them always co-extensive with the roadway. Both these acts are mere survivals. Among villas with considerable grounds on sites of picturesque and irregular topography, would not the people be better served, and the region made a hundred times more attractive and parklike, if secondary streets were not merely narrower but less frequent, while footpaths were at nearer

intervals? Should we not, by this means, create very simply and practically a *rus in urbe* of a most serviceable kind—even a "Garden City" for the well-to-do and middle class whom, in such great numbers, the city still must hold?

It is the universal modern practice in good road building through country districts, to put a good surface on a comparatively narrow strip rather than a cheap surface on a wide strip. This, it is considered, serves the traffic better and with more genuine economy. May we not learn also from this conclusion? From the standpoint of the traffic to be served, the secondary street in a residence section is much more nearly akin to the rural highway than to the city's business thoroughfares.

But returning to the interests of residents on those streets, the full value of a method of street platting adjusted to real conditions, instead of to imaginary ones, appears forcibly in sections where rents are lowest. That is to say, it is marked in the districts containing the greatest number of people. The street of excessive width is a good thing in the poorer quarters, we are told, because it provides not only light and air but play and recreative space. Less street and more yard area would provide the air and light as well and would give wholesomer play or recreative opportunity. The added yard area might be gained in either of two ways. It might be an addition to each lot of the area saved through narrowing the street: or it might be one or more concentrated park or play areas representing in extent the sum of all the street saving. The gain in the latter arrangement is obvious. As to the former, a child is safer at his home doorstep, inside his father's fence, than in the street. It is to be considered, too, that as, for half the year—even in this latitude—the doorstep of the laborer's house is another room; the dooryard would answer this purpose still better, even offering in its greater spaciousness an opportunity for the entertainment of friends. So would be encouraged that home-sentiment so precious to a city's welfare.

Other problems intrude themselves. In the poorer quarters the deep lot is the source of many housing evils. Should we not fear, then, to lengthen it? The answer is simple. In tenement sections, with their teeming population, the volume of traffic prohibits the narrowing of the street. In a section of "cottages," where the menace of the long lot lies in the temptation it offers to construction on both ends, it is not the depth of lot which we have to fear, but the depth of that part of the lot which is back of the building line. To that the increase in front space would add nothing.

Do I seem to have traveled far from my theme—to have made a paper out of what was to have been only an illustration? Perhaps if the illustration really illustrates, there is no need of extending the paper. As nothing is settled until it is settled right, so palpable a maladjustment as our present method of street platting can be only a transitional phase. The city of the present proves, in sad reality, to be yet the town of the past, grown sometimes in population and often in area, but not yet fitted to the conditions of modern urban living. There was a time, in old town building, when people lived in the buildings in which they worked, and everything was mixed up together in a compression that gave little chance for the differentiation of function. Then it might have been well enough, in theory, for one street to be like another; and the actual differences between them were possibly traffic handicaps. But that time has gone.

Jane Addams, perhaps our greatest social worker, says in one of her books: "The city grows more complex, more varied in resources and more highly organized, and is, therefore, in greater need of a more diffused and local anatomy." She says this simply and incidentally, to prove another point, quite as if everyone admitted it. But does not this state tersely the great lesson which we city planners have yet to learn, or learning, to put into our practice?

Childhood is very dear and picturesque; but it passes at last in all our human institutions. Of these none is so complex as a city; and for none is absolute efficiency and adaptation to function so important. To plan streets on a system devised to meet the needs of an outgrown age is to impair their efficiency and to cause an economic waste which bears heavily indeed upon us all, and cruelly upon the poor. In so far as it creates streets that transcend in width any traffic requirement that is probable, it robs the citizens of yard and home space.

In the ideal city of the future, the system surely will not persist. Already there are numberless instances of its breaking down. And so fundamental is the platting of streets, that no other merits of the modern city can atone for shortcomings there. To the life of our lost urban childhood, the streets of the little city of long ago were better adapted than are most streets now to our lately attained and strenuous urban manhood. We need to recognize the modernness of the problem, and to approach it with unprejudiced freedom and common sense.

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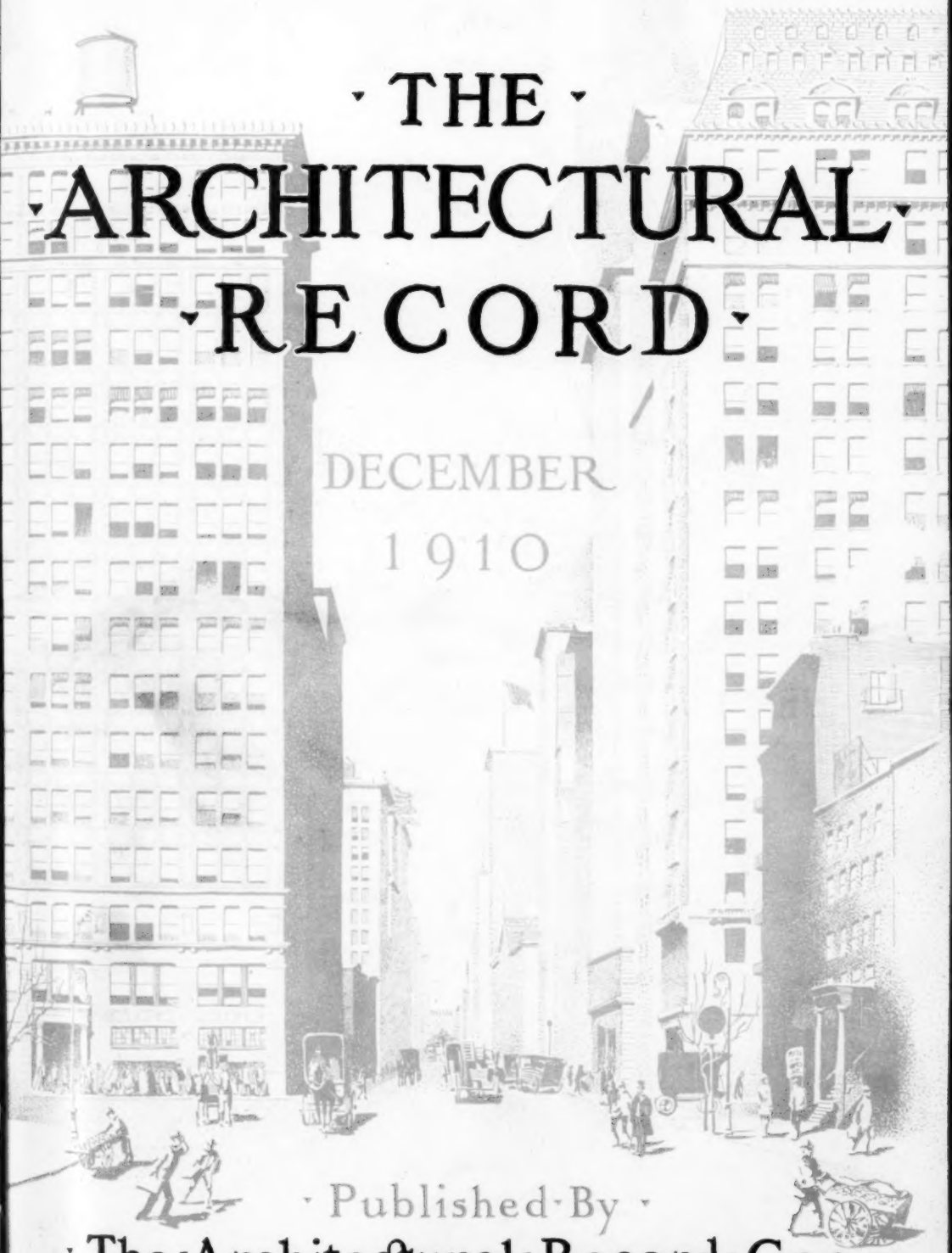

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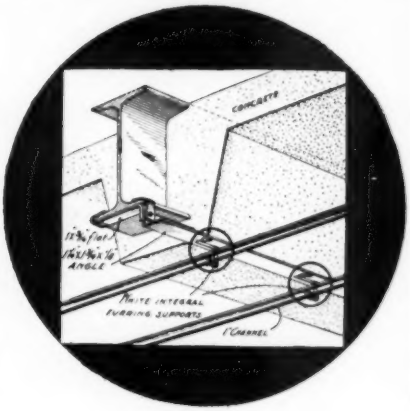


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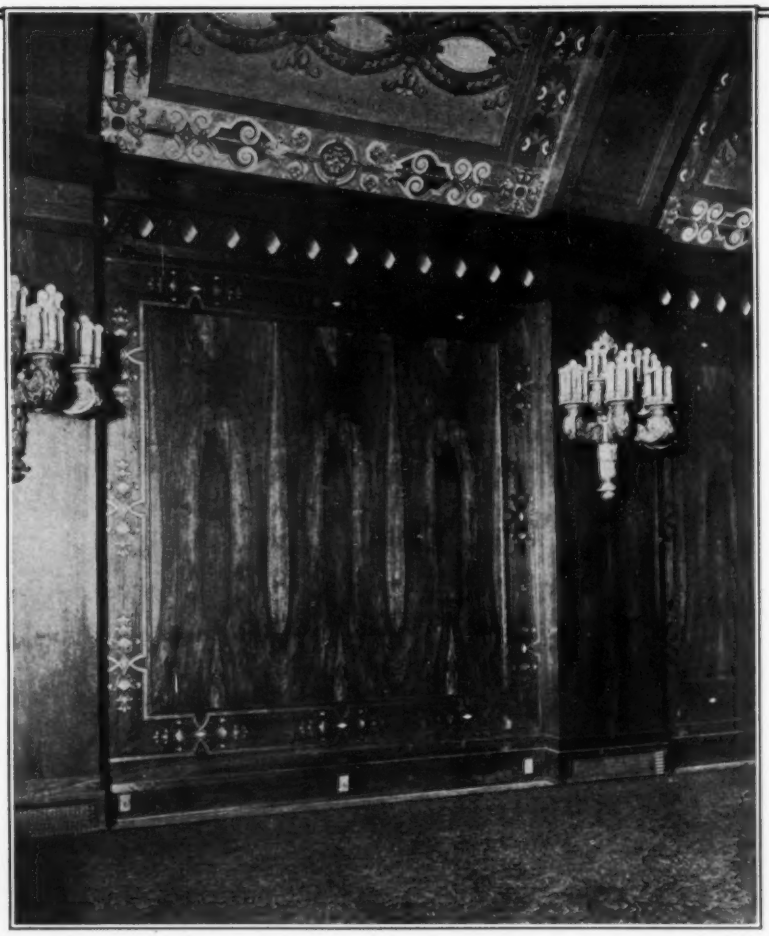

Detail of Panel and Pilaster Treatment in the Italian Room or New Banquet Hall in the Auditorium Annex, Chicago. R. E. Seyfarth, Architect

*Wainscoted 15 feet high in Circassian Walnut. From the woodworker's standpoint, the feature of the cabinet work in this room is not only the highly figured veneers, but the extreme length of same. There is no horizontal matching in the panels or on the pilasters. Circassian Walnut usually comes in lengths from seven to nine feet, but in this case highly figured veneers were obtained for this room from 13 to 14 feet long.*

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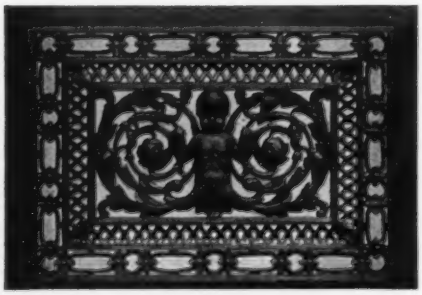

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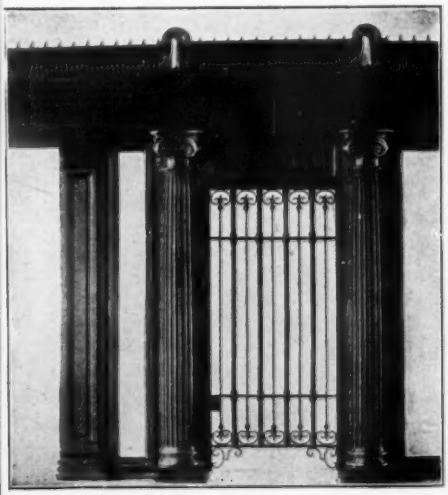

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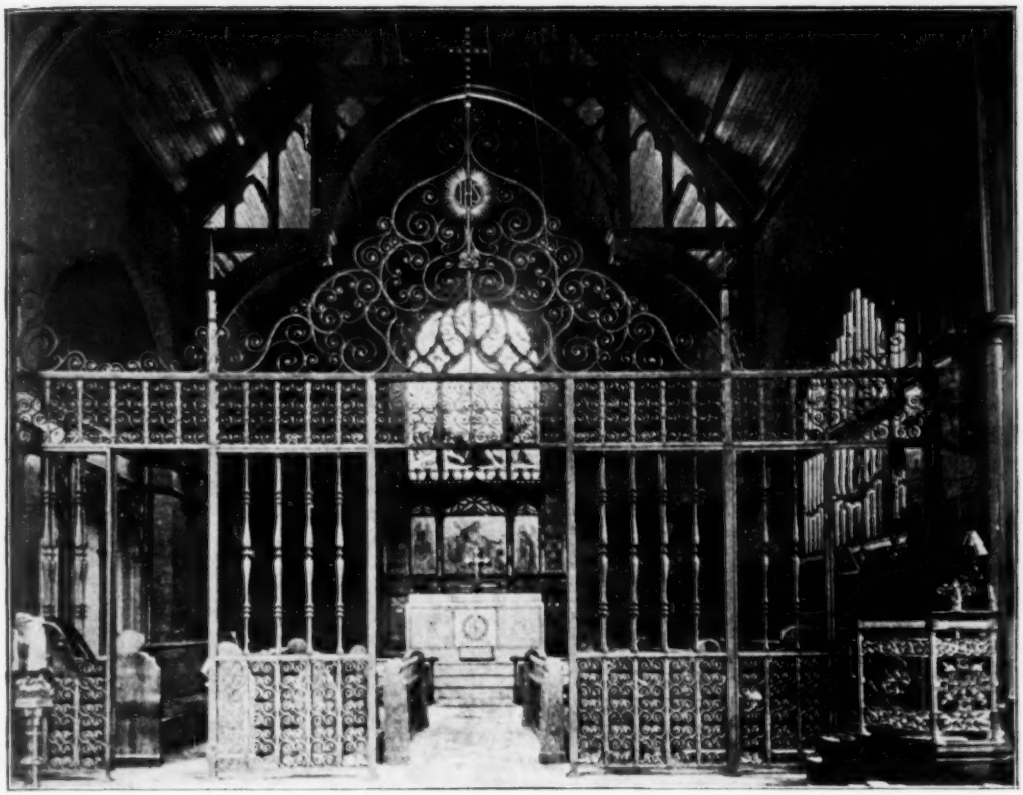

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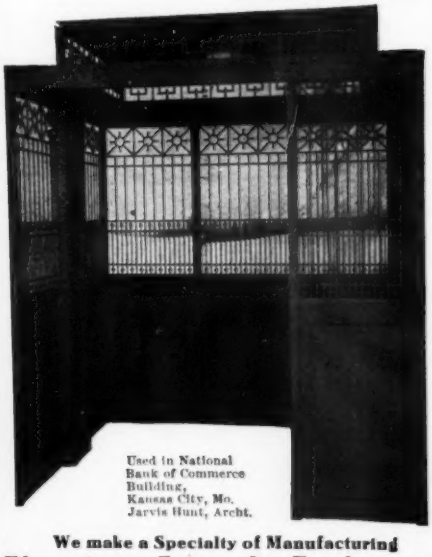

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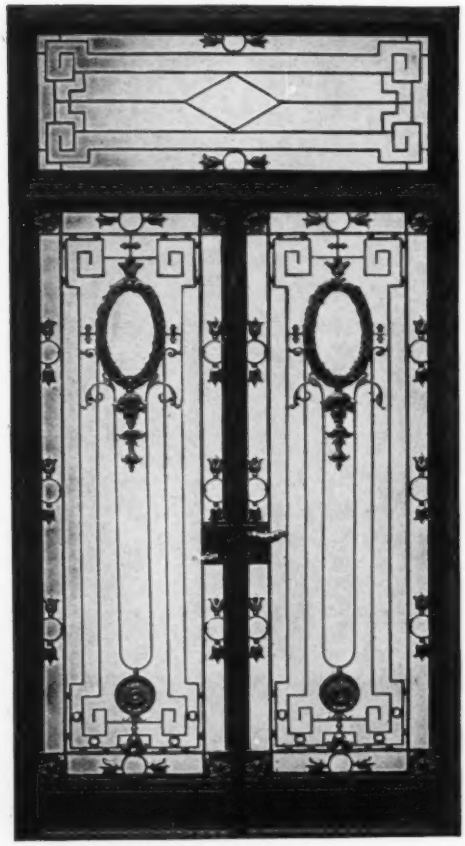

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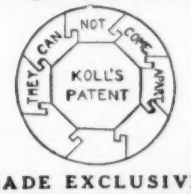


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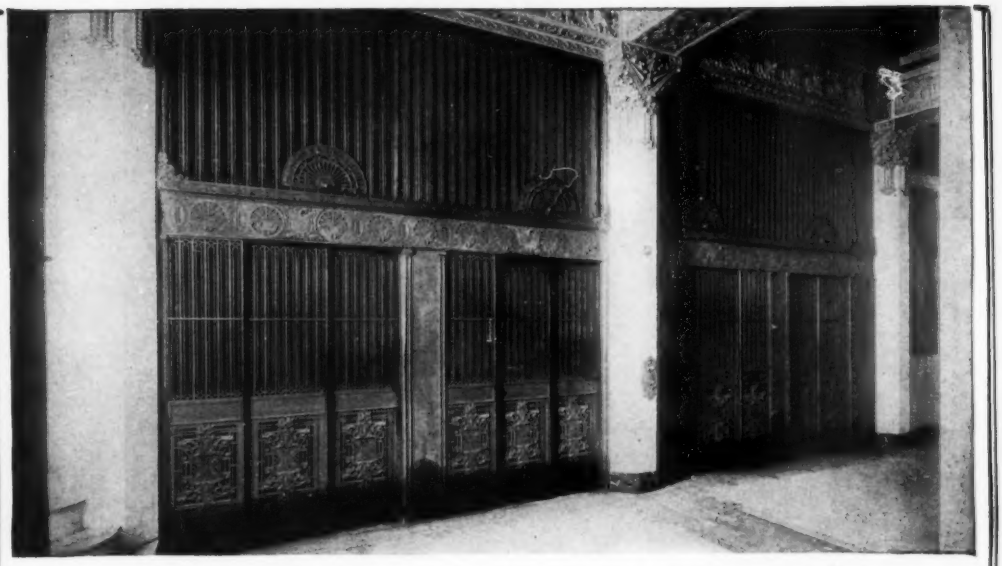

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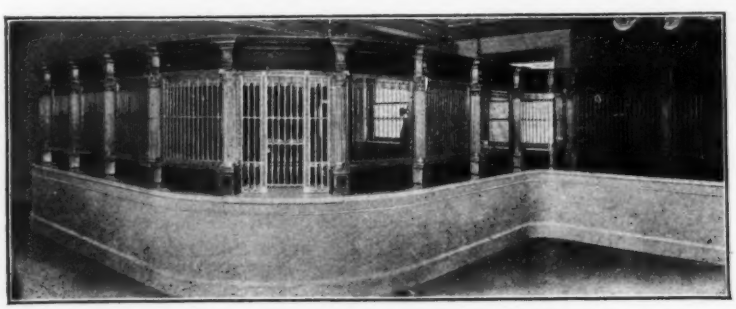

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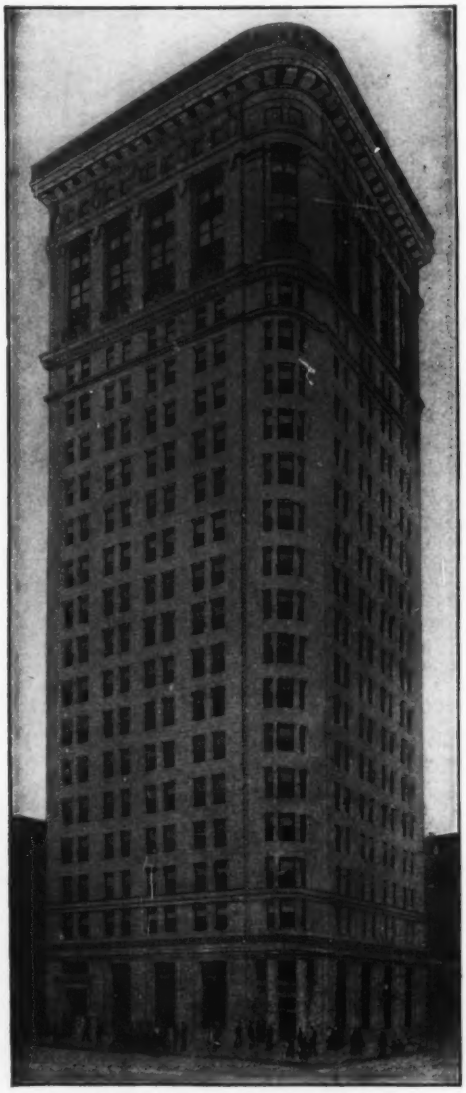

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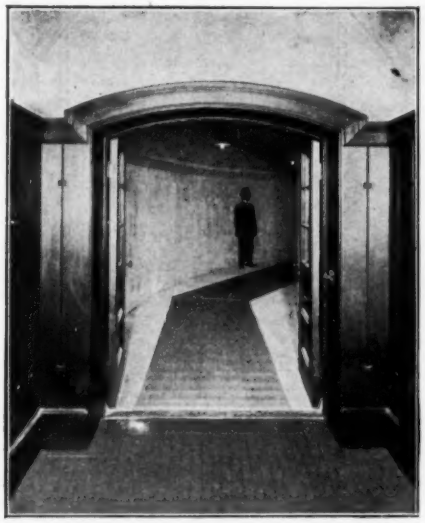

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# An Index to the Advertisements


American Audit Co..... 76
American Bridge Co..... 52
*American Enameled Brick & Tile Co..... 59
*American Luxfer Prism Co., 3d Cover
American Pencil Co..... 28
American Radiator Co..... 1
*American Steel & Wire Co... 77
Anderson-Tully Co.....44, 45
A. P. W. Paper Co..... 66
Architectural Decorating Co.. 14
Architects Standard Bronze Co. 11
*Armstrong Cork Co..... 69
*Art Metal Construction Co.... 12
*Atlantic Terra Cotta Co..... 55
*Atlas Portland Cement Co.... 81
Atlas Roofing Co..... 60

Baker Ice-Machine Co..... 75
Baker Lumber Co.....44, 45
Baldwin Piano Co..... 29
*Barber Asphalt Paving Co.... 21
*Barrett Mfg. Co..... 23
Battelli, Armando ..... 30
Beck & Co., Fr..... 28
*Berger Mfg. Co..... 76
*Bird & Son, F. W..... 69
Bobbink & Atkins..... 62
Boyle & Co., Inc., John..... 68
Brussell, Dennis G..... 56
*Burt Mfg. Co..... 6

*Cabot, Inc, Samuel..... 70
*Cahill Iron Works..... 96
Caldwell Mfg. Co..... 62
Carrier Air Conditioning Co.. 84
*Carrier Lumber & Mfg. Co., 44, 45
Cella Shop, Inc..... 29
*Chicago Spring Butt Co..... 74
Clark Co., C. Everett..... 61
*Cleveland Art Metal Co..... 8
Cleveland Vacuum Machy. Co. 41
*Climax Sanitary Co..... 95
*Clow & Sons, J. B..... 97
*Corcoran, A. J..... 67
Corrugated Bar Co..... 65

*Dahlstrom Metallic Door Co.. 66
Decorators Supply Co..... 12
*Detroit Show Case Co..... 72
*Detroit Steel Products Co., See Insert facing p. 32
Dodge Co. .....32, 82

Ebinger Sanitary Mfg. Co.... 31
*Edison Portland Cement..... 80
*Edwards Mfg. Co..... 25
Estey Wire Mfg. Co..... 28

Farrington Co. ..... 9
Federal Terra Cotta Co..... 17
Fischer & Jirouch ..... 15
Fiske & Co..... 59
*Flour City Ornamental Iron Works.....12 and 26
Folsom Snow Guard Co..... 26
*Fox & Co., M. Ewing..... 71

*General Electric Co..... 53
Girvan-Nachod Co..... 82
Glauber Brass Mfg. Co..... 90
*Glidden Varnish Co..... 70
*Gorham Co. ..... 4
Gorton & Lidgerwood Co..... 86

Hanson & Rhodes..... 61
*Hardtmuth, L. & C.....26, 62
Harrison Eng. Co..... 85
*Hart Mfg. Co..... 74
*Hartmann-Sanders Co..... 10
*Hecla Iron Works..... 4
*Hess Warming & Ventilating Co..... 66
*Higgins Mfg. Co..... 68
Higgins & Co., Chas. M..... 14
*Himmelberger-Harrison Lumber Co.....44, 45
*Honeywell Heating Spec. Co., See Insert facing p. 32
Howard & Morse..... 56
Howes, Benj. A..... 80
*Humphrey Co..... 86
Hussey & Co..... 62
Hydraulic Oil Storage Co.... 54

*Ideal Concrete Machy. Co.... 82
International Press Clipping Bureau..... 60

*Jackson Co., W. H..... 4
Jenkins Bros. ..... 90
Johnson, E. J..... 25
Johns-Manville Co., H. W.... 65

Karpen & Bros., S..... 27
*Kelsey Heating Co..... 87
*Kennedy, David E., Inc.4th Cover
*Kewanee Boiler Co.....88, 89
*Kewanee Water Supply Co... 16

*Lamb-Fish Lumber Co....44, 45
Lane, I. G..... 62
*Lasar-Letzig Mfg. Co..... 10
Lawrence Cement Co..... 84
Lehigh Portland Cement Co.. 86
*Luehrmann Hardwood Lumber Co., Chas. F.....44, 45
Lufkin Rule Co..... 62

*McCray Refrigerator Co..... 63
*McCrum-Howell Co.....40, 41, 51
Manhattan Iron Works..... 31
Marsh-Capron Co..... 79
Mengel & Bro. Co., C. C..... 39
Monon Route ..... 58
*Morgan Co. ..... 43
Moses, L. ..... 72
*Mueller, H. Mfg. Co..... 91
*Mullins Co., W. H..... 73

National Dictograph Co..... 62
*National Fire Proofing Co., See Insert facing p. 32
*National Lead Co..... 71
*Nelson Co., C. T..... 10
*Never-Split Seat Co..... 94
Non-Staining Cement ..... 83
*Northwestern Terra Cotta Co. 60

*Ohio Elevator & Machine Co.. 73
*Otis Elevator Co..... 46

Palen's Sons, H. W..... 15
Parker, Preston & Co..... 61
Pasman, A. N..... 90
Pearlman & Co., V. S..... 29
*Phila. & Boston Face Brick Co..... 61
Piedmont Red Cedar Chest Co. 29
Pierce, Butler & Pierce Mfg. Co..... 85
Pomery & Co..... 63
Prometheus Electric Co..... 57

*Rackle & Sons Co., Geo..... 34
Reeves Mfg. Co..... 57
*Reliance Ball-Bearing Door Hanger Co..... 74
*Richards Mfg. Co..... 71
Richardson & Boynton Co.... 87
Richardson Engineering Co... 62
*Ridgway Dynamo & Engine Co..... 56
*Rinald Bros. ..... 62
*Rixson Co., Oscar C..... 75
*Rookwood Pottery Co..... 37
Russell & Erwin Mfg. Co.... 49
*Rutland-Florence Marble Co.. 36

Saino Fire Door & Shutter Co. 90
Samson Cordage Works..... 72
Sanitary Co. ..... 93
Sayre & Fisher Co..... 58
Schick-Johnson Co. ..... 2
Schreiber, L. & Sons Co..... 11
Schwerd, A. F..... 43
Silver Lake Co..... 62
Smith, Edw. Co..... 70
Smith & Egge Mfg. Co..... 72
*Soss Mfg. Co..... 75
*Standard Varnish Co..... 19
Stearns Lumber Co., A. T.... 68
*Stebbins Mfg. Co..... 90
Steinway & Sons..... 38
*Stewart Iron Works Co..... 58
Stocker, F. Wm..... 63
Stromberg-Carlson Tel. Mfg. Co..... 35
Sweet's .....64, 92

Tablet & Ticket Co..... 30
*Taylor Co., N. & G..... 50
Thatcher Furnace Co..... 31
*Thorp Fire Proof Door Co... 13
*Three States Lumber Co., The 44, 45
Tiffany Studios ..... 8
Trageser Steam Copper Works 90
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*Van Dorn Iron Works Co.... 8

Wallace, N. ..... 72
*Waterproofing Co., The..... 15
*White Fireproof Construction Co.....2d Cover
*Williams, Inc., John..... 7
Williams Slate Co..... 67
Wilson, A. & S..... 14
*Winslow Bros. Co..... 5
*Wirt & Knox Mfg. Co..... 70
Wolff Mfg. Co., L..... 98
*Wood Mfg. Co., John..... 86
*Wood Mosaic Co..... 74

Yale & Towne Mfg. Co..... 3


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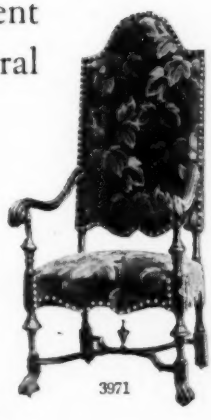
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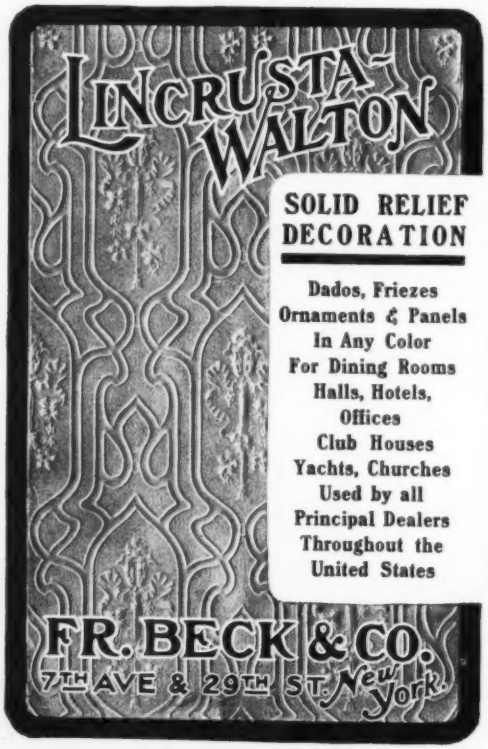


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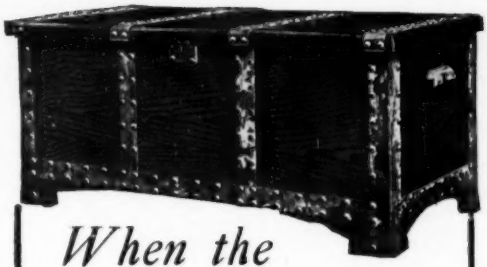

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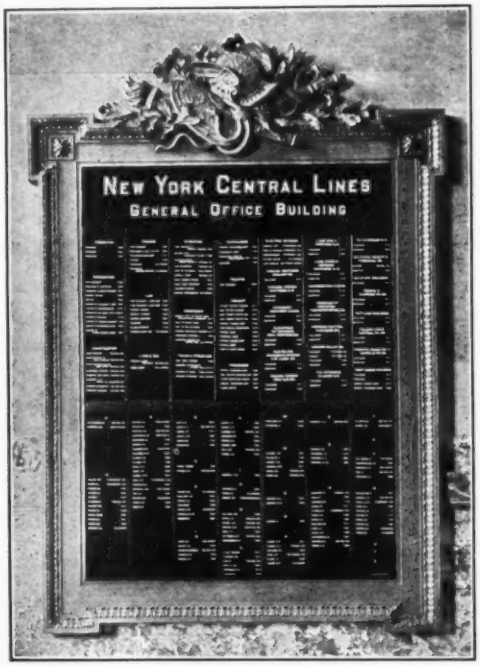


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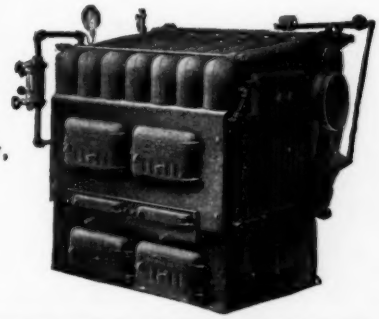

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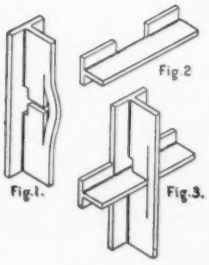


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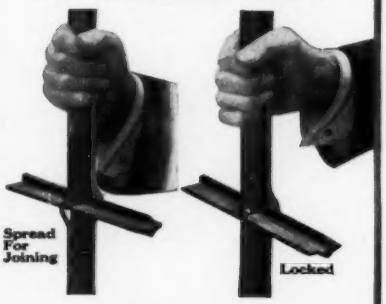


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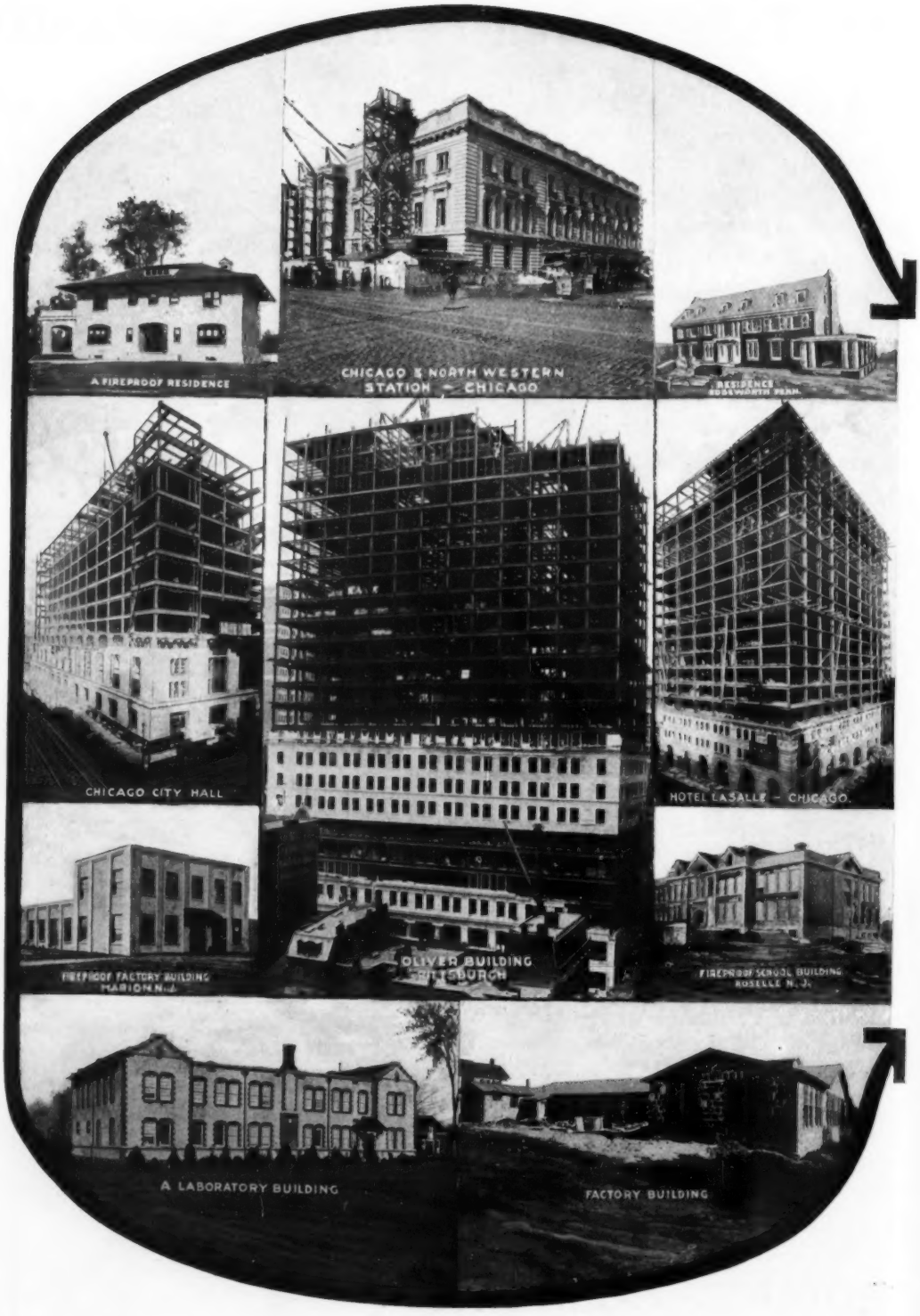
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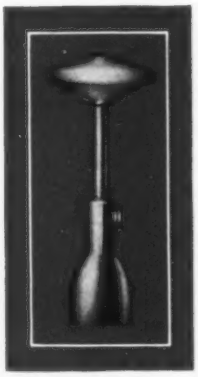

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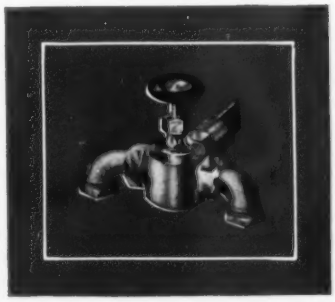

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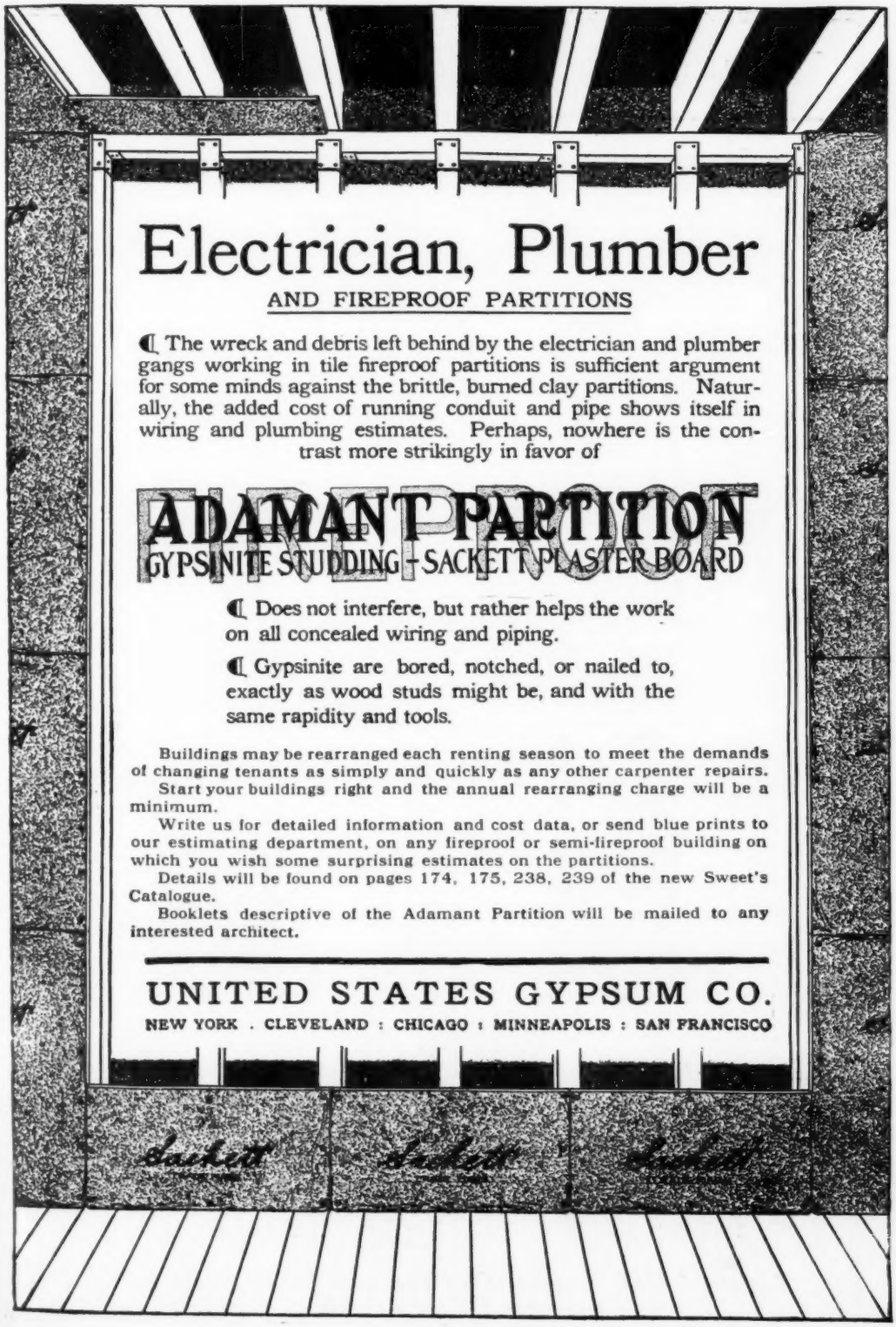


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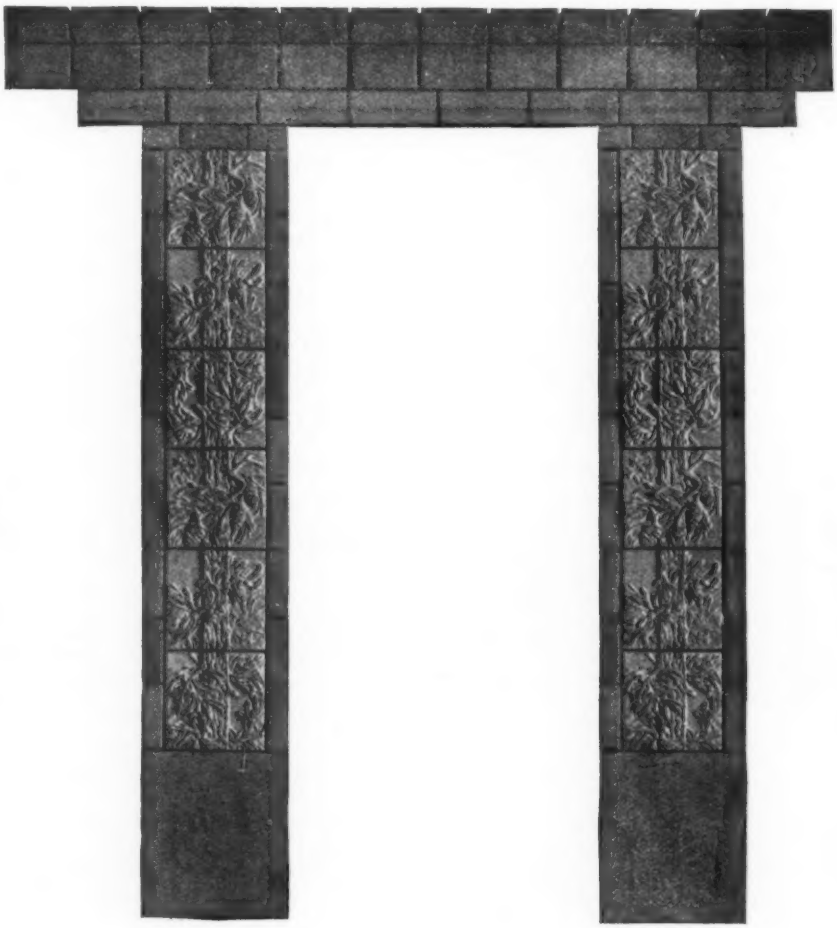

This illustration shows an arrangement of stock elements of Rookwood Faience Tiles to form a doorway suitable for insertion in concrete.

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In an ebonized case, $800.

*Illustrated catalogue will be sent upon request and mention of this magazine.*

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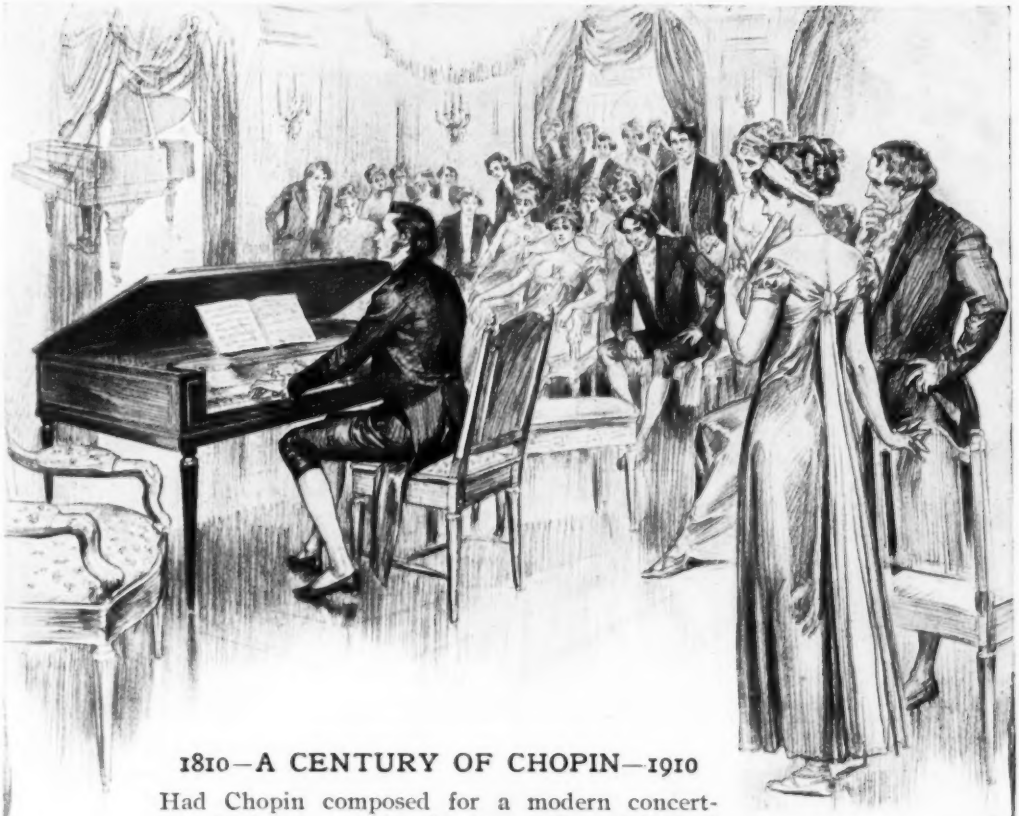
STEINWAY HALL,
**107 and 109 East Fourteenth Street, New York.**
*Subway Express Station at the Door*



1810—A CENTURY OF CHOPIN—1910

Had Chopin composed for a modern concert-grand where *would* inspiration not have led him!

To know the "greater Chopin", to realize how ingenuity may glorify genius, one must hear the Chopin of

The Baldwin Piano

Here are possibilities of tone-color such as only the composer of the "Ballads" could conjure. Immensity of tone, also, a *pianissimo* that is but a whisper, a *forte* overwhelming by contrast, so beautifully shaded are the gradations.

With Baldwin-tone, de Pachmann, authoritative Chopin-Player, reaches heights denied by the limited keyboard of Chopin's day.

Highly-developed qualities endearing the Baldwin to the tone-poets of the piano give it an equally royal place in the regard of cultivated amateurs.

THE BOOK OF THE BALDWIN PIANO will be sent free upon request.

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# With the Finish of Polished Ebony

THE splendid polished surface and the readiness with which Fir may be finished to resemble the expensive hardwoods —oak, mahogany and walnut—have supplied but *one* element to help popularize

## Chehalis Fir Doors

The *other* element—the element that puts these doors in a class by themselves—is the quality of wood *in* and workmanship *on* these doors. Nothing but best quality Old Growth Yellow Fir is used and the doors are made according to the methods proven best from years of successful door-building experience. The only doors manufactured where the wood of all five panels are picked for matched grains. If you knew what we know about Chehalis Fir Doors you would specify no other door for the house if it was *yours*. Why not specify the best for others. **Send for Catalog (X).** It tells about the doors. Gives many points of special interest to architects. Your name brings it; a dime also brings samples of Fir finished in popular woods. Write at once.

**Chehalis Fir Door Co., Chehalis, Wash.**

## Correct Craftsmen Style

**Morgan Doors** are noted for correctness and originality of design and finish. Their construction is guaranteed to be absolutely faultless.

MORGAN DOORS

add wonderfully to the permanent value, comfort, beauty and satisfaction of the house.

**Morgan Doors** are light, remarkably strong, and built of several layers of wood with grain running in opposite directions. Shrinking, warping or swelling is impossible. Veneered in all varieties of hard wood—Birch, plain or quarter-sawed red or white Oak, brown Ash, Mahogany, etc. Any style of architecture. Very best for Residences, Apartments, Offices, Bungalows or *any* building.

Each **Morgan Door** is stamped "**Morgan**" which guarantees highest quality, style, durability and satisfaction. You can have **Morgan Doors** if you *specify* and *insist*.

In our new book—"*The Door Beautiful*" —**Morgan Doors** are shown in their natural color and in all styles of architecture for interior or exterior use, and it is explained why they are the best and cheapest doors for permanent satisfaction in any building.

***A copy will be sent on request.***

Architects:—Details of Morgan Doors in Sweet's Index 678-9.

**Morgan Company, Dept. R, Oshkosh, Wis.**

*Distributed by* **Morgan Sash and Door Co., Chicago**
**Morgan Millwork Co., Baltimore, Md.**

***Handled by Dealers who do not substitute.***

# MAHOGANY

## "KING OF HARDWOODS"

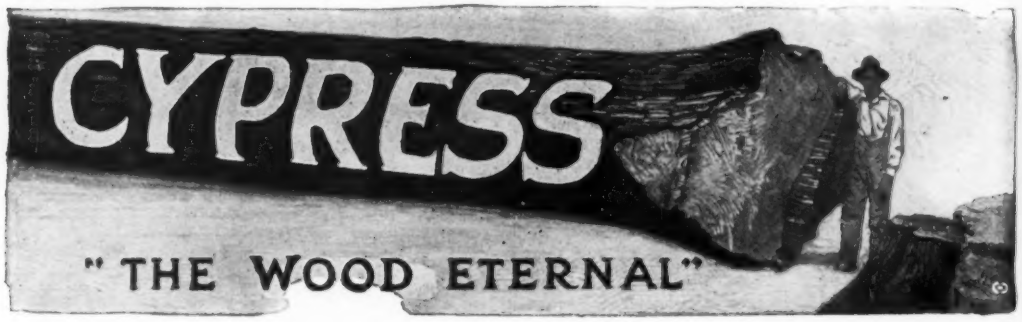
NEW DEPARTMENT STORE OF GIMBEL BROS., NEW YORK
D. H. Burnham & Co., Architects

*All interior trim of above building manufactured in genuine Mengel Mahogany by the Robert Mitchell Furniture Company, of Cincinnati, Ohio. The selection of mahogany for these fixtures was made by the owners, owing to the VERY SLIGHT INCREASE IN COST over domestic woods.*

ARCHITECTS WE SOLICIT CORRESPONDENCE WITH YOU REGARDING COMPARATIVE COSTS

**The C. C. Mengel & Bro. Co.**
Incorporated
*Manufacturers of Mahogany Lumber and Veneers*
LOUISVILLE, KENTUCKY

"PUT A STOP TO DEPRECIATION—BUILD WITH CYPRESS *AT FIRST!*"




*CYPRESS* is SO MUCH *the best* wood—for SO MANY KINDS of uses—that only its more conspicuous merits can be covered in any single advertisement. CYPRESS advertising will therefore proceed upon the broadest lines, with an educational purpose as *permanent* and *safe* as your investment (or your clients' investment) in CYPRESS itself.

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## "CUT OUT REPAIR BILLS—BUILD OF CYPRESS *AT FIRST!*"

If "it" (whether palace, bungalow, "back-steps" or *pasture fence*) is *already built*—

## MAKE YOUR NEXT REPAIRS WITH CYPRESS AND PUT A STOP TO DEPRECIATION

*CYPRESS is indeed "the wood eternal." He who uses Cypress builds but once.*

**Why not FIND OUT what CYPRESS can do for YOU, NOW?**

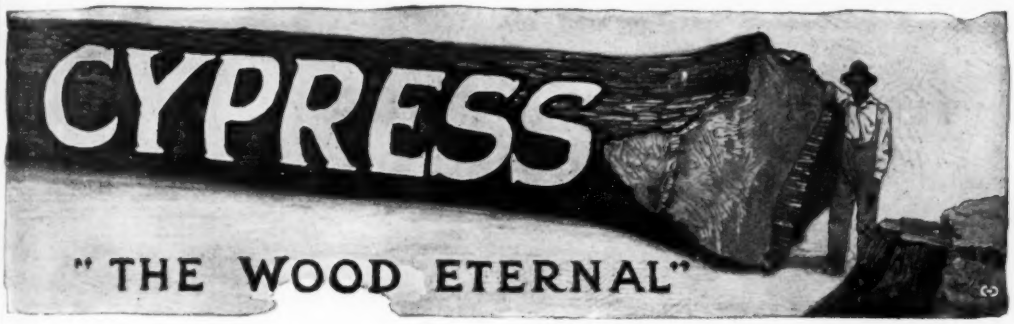
WRITE US—ASK YOUR OWN QUESTIONS—about big needs, or little ones. You can rely on detailed and reliable counsel if you address our "ALL-ROUND HELPS DEPARTMENT."

**Southern Cypress Manufacturers' Association**

**1211 HIBERNIA BANK BUILDING, NEW ORLEANS, LA.**

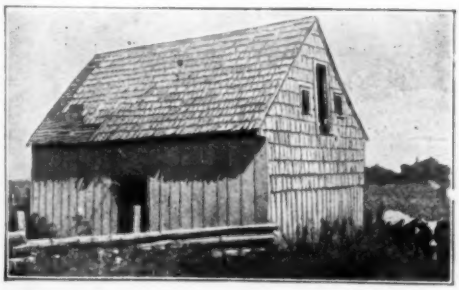
*Probably your lumber man sells CYPRESS; if not, WRITE US, and we will tell you the dealer handiest to you.*

"PUT A STOP TO DEPRECIATION—BUILD WITH CYPRESS *AT FIRST!*"




# *Some Difference Between These Houses—* (*Both Cypress*):

It took a cyclone to injure this.



In this house (of solid CYPRESS), in Sinepuxent, Md., the heroic Commodore Decatur was born, January 5, 1779. In 1884 a cyclone left it as photographed above—wrenched and half-denuded, BUT NOT DECAYED. CYPRESS is equal to an insurance policy against Ordinary Depreciation and Repairs. *SPECIFY CYPRESS.*

Only a cyclone can wear this out.

This is a modern residence in Brooklyn, N. Y., roofed and sided with CYPRESS shingles throughout. CYPRESS shingles when weathered take on a beauty and substantial picturesqueness not approached by any other material. CYPRESS bevel-siding (clap-boarding) is equally enduring. "Cut Out Repair Bills."

*CYPRESS is indeed "the wood eternal." He who uses Cypress builds but once.*

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*Probably your lumber man sells CYPRESS; if not, WRITE US, and we will tell you the dealer handiest to you.*

# RED

*This illustration is from a photograph made direct from the door itself. The photograph was not retouched. This is an inlaid flush veneered* Red Gum *door, made by the American Compound Door Company, Chicago.*

# GUM

## *Red Gum ranks in beauty with any fine hardwood on the market.*

***A number of the largest door manufacturers in the United States are makimg Red Gum doors.***

***They are depriving themselves of a perfectly legitimate profit when the beauty, durability and public liking for Red Gum are considered, for they are selling Red Gum doors at virtually the same price as doors of yellow pine and unselected birch—these three woods at about 10% lower than common red oak!***

***Red Gum is as fine in appearance as Circassian Walnut and is being used in place of mahogany in lots of places.***

***Does not its present absurdly low price suggest something to the thinking and discriminating architect?***

*Architects desiring to see samples of Red Gum, both rough and finished, or who wish market prices of selected Red Gum, are invited to correspond with any of the following firms:*

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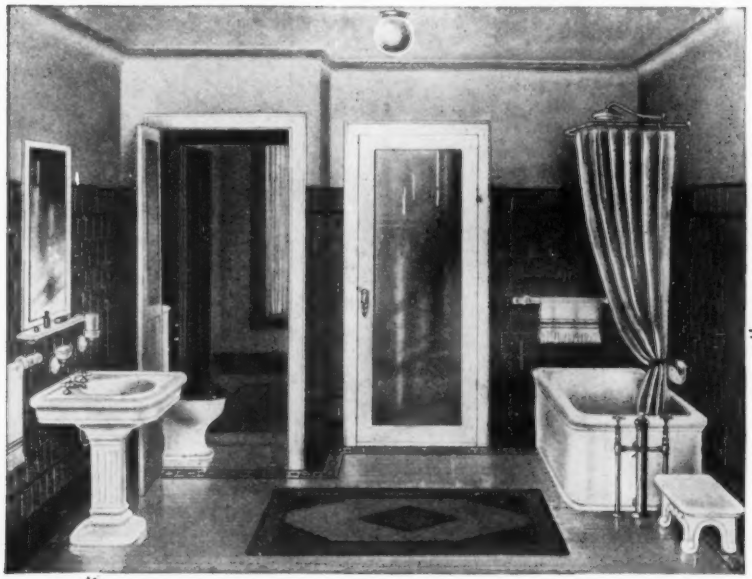
THREE STATES LUMBER COMPANY - - - - Memphis, Tennessee
HIMMELBERGER-HARRISON LUMBER COMPANY, - Morehouse, Missouri
CHARLES F. LUEHRMANN HARDWOOD LUMBER CO., St. Louis, Missouri
CARRIER LUMBER & MFG. COMPANY - - - Sardis, Mississippi



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Manufacture

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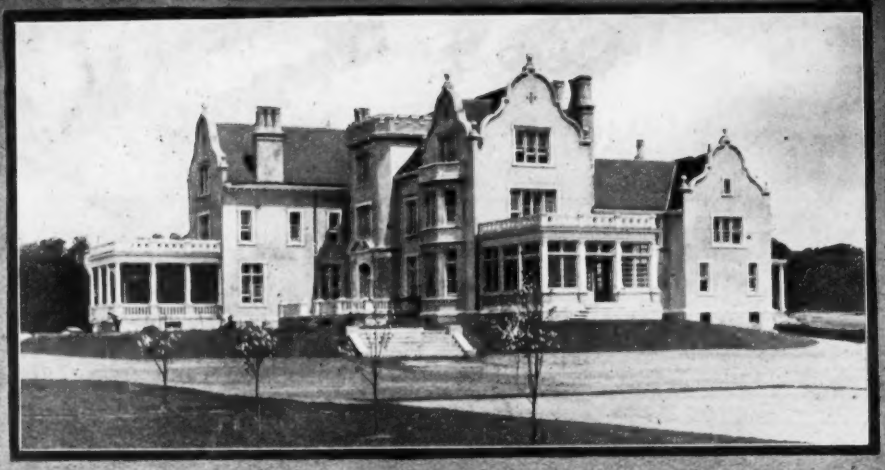
By reason of our years of experience in the manufacture of all clay fixtures *only* for the modern bathroom and toilet, coupled with the best workmanship and material, a business policy of fair dealing and upholding a trade marked guarantee—by reason of these things, the Trenton Potteries Company is in a position to fill your specifications in a manner which will relieve the architect of further responsibility and secure absolute satisfaction for his client.

***Our catalogue and all necessary or desired information will be sent upon request***

*The Trenton Potteries Company*

Trenton, New Jersey, U. S. A.



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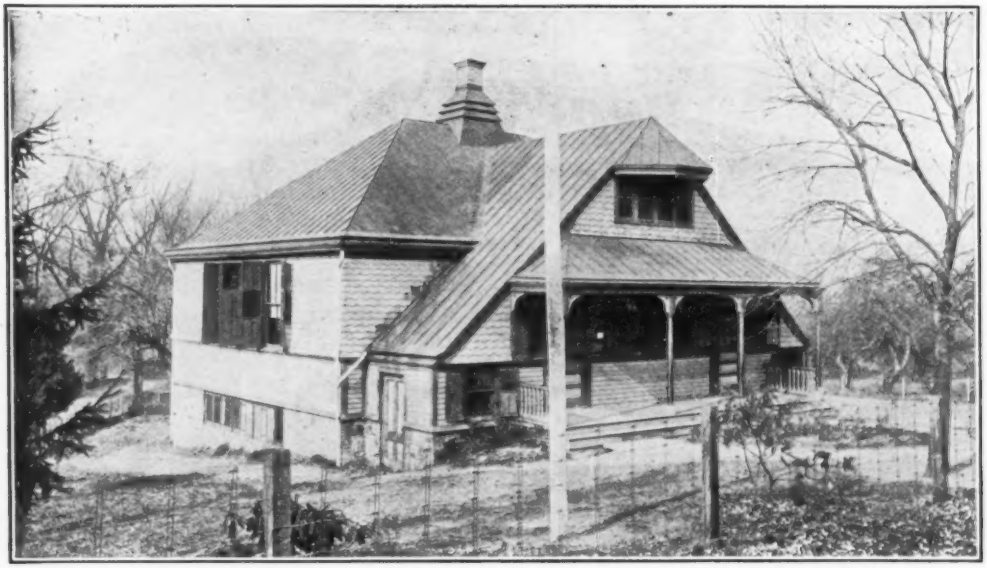
*Works at New Britain, Conn.*

# "Target and Arrow" Roofing Tin was used to cover the Sleepy Hollow School at Tarrytown, N. Y.



THIS historic building now has a roof that is proof against fire, lightning, and all attacks of the weather.

"TARGET AND ARROW" tin, made by our exclusive process — the "full-seven-open-pot, palm-oil, hand-dipping stack"—is today the same durable quality we have supplied to the American sheet metal roofing trade for more than fifty years.

It is made at our Philadelphia Works by the slow, thorough methods formerly employed at our works in Wales.

The durability of this plate has been established by the only sure test, the test of time. Roofs of this heavily coated, hand-made tin are found in as good condition after forty and fifty years' service as when first put on. Its constant use by architects for roofing permanent buildings of the highest type, as well as for less pretentious structures—like this little schoolhouse — indicates its adaptability as a roofing material.

Numerous stocks of this tin are carried at principal distributing points in all parts of the United States. No locality is far from a source of supply.

Made in three thicknesses, IC, IX and IXX—durability the same in each case, the difference being in the base plate only.

Full technical information, including standard specifications for architects' use, will be sent upon request.

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*Headquarters for Good Roofing Tin since 1810*

# The "RICHMOND" Concealed Transom Lift

"Simply Turn the knob"

**In a Class By Itself**

This new device marks an epoch in the manufacture of fixtures for the mechanical equipment of modern buildings, being the first and only concealed contrivance yet devised that will successfully and easily operate transoms.

**Invisible and Compact**

All parts, except only the operating knob, are concealed within the door trim—the device being installed upon the back of the door jamb before the trim is applied. It is light, compact and operates easily, noiselessly and surely.

**Simple to Operate**

To open or close transom to any required angle, simply turn the knob on the door trim and when the required angle is reached, let go, and the transom stops, and cannot be moved until the knob is again turned. No locks or hinges are required to hold the transom, the device itself serving every function required.

**Scientific Principles**

The "RICHMOND" Concealed Transom Lift is constructed in accordance with important scientific principles. It is positive in action and contains but few joints or contacts. The different parts work together smoothly and it is practically impossible for it to get out of order—no danger of rods slipping or cogs failing to turn, as sometimes happens in the old style appliances.

**Convenient for Operator**

Think of the convenience of being able to move the transom to any desired angle by a simple turning of a knob within easy reach. Compare this with the clumsiness, unreliable and unsatisfactory working of the usual style of transom fixture.

**For All Size Transoms**

The "RICHMOND" Concealed Transom Lift will operate such sized transoms as are used above doorways, in hotels, office buildings, apartments, schools, etc. A Giant Pattern Device is made for transoms over entrance doors or casement windows.

**Easily Set**

The device leaves our factory completely assembled, except for the pivot parts, which are placed in jamb and ends of transom. These parts are very simple and easy to attach, and the installation requires less work and time to install than the ordinary exposed rod.

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***If it's "RICHMOND" it's right***

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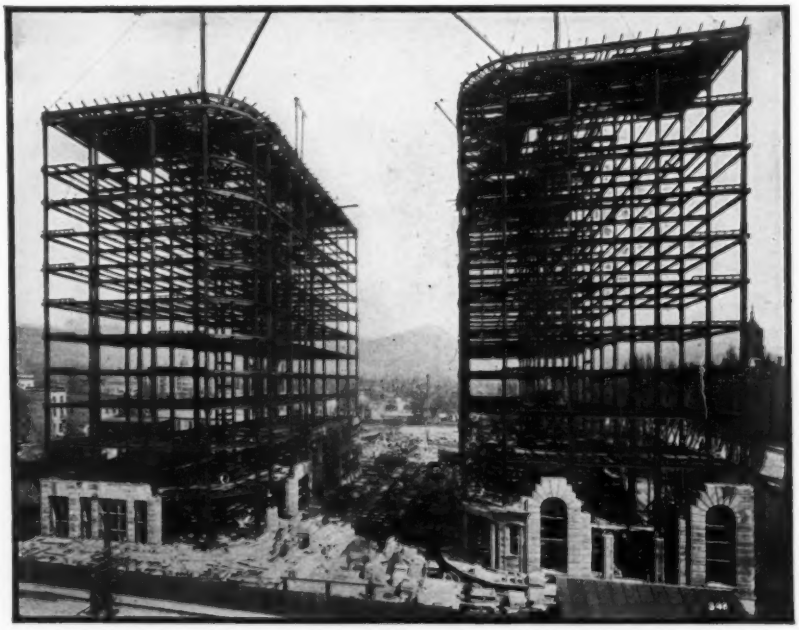

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**Terra Cotta Company**

**1170 Broadway, N. Y.**

Architects should insist upon close fitting Architectural Terra Cotta and embody *"ground joints"* in their specifications.

The Atlantic Company makes a practice of grinding joints, invariably on lower story and entrance work. Although grinding frequently accounts for the difference between good and poor Terra Cotta, the practice is far from general among manufacturers; few have the necessary equipment.

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## "An Ounce of Prevention"

It is easier to *prevent* a disastrous fire than it is to *stop one.*

The weak point in all buildings is through the windows.

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**Fire Proof—Storm Proof—Dust Proof**

# Windows

have successfully withstood the severest trials not only in factory experiments but in actual conflagrations.

**Mullins Windows are** perfect windows in every way.

Entire lock-seamed metal with no soldered joints in frame, sill or sash. They cannot warp or buckle and are not affected by heat, expansion or contraction.

The Peyton Building of Spokane, Washington, shown herewith, is one of the many hundreds of modern fire proof buildings equipped with Mullins Windows.

**Mullins Fire Proof Windows** are manufactured under the supervision of **Underwriters' Laboratories, Inc.,** according to the latest specifications of the **National Board of Fire Underwriters,** and **every window is inspected, approved and labeled** with their **official label.**

We have catalogues showing our various lines of product. Please specify the particular class of sheet metal work you are interested in and we will send you the proper catalog for the same.

**W. H. Mullins Company**

**340 Franklin Street** **Salem, Ohio**

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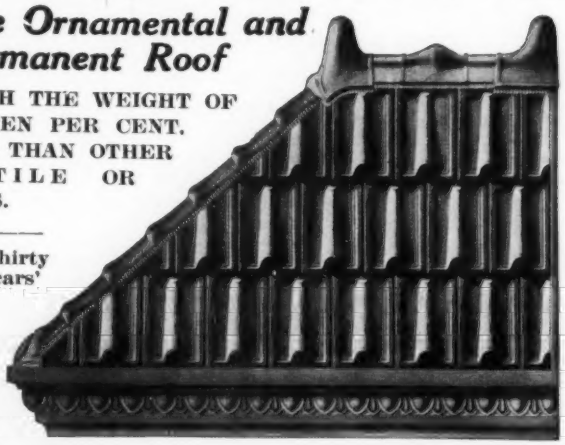
## *The Ornamental and Permanent Roof*

ONE-SIXTH THE WEIGHT OF SLATE, TEN PER CENT. HEAVIER THAN OTHER METAL TILE OR SHINGLES.

**Good for thirty or more years' service.**

Embossed end lap prevents moisture from penetrating.



**One of Several Styles, "Each more beautiful than the other."**

Showing section of roof with Style "A" Tile, with Hip and Gable, Finials, Hip Moulding and Cresting Blocks.

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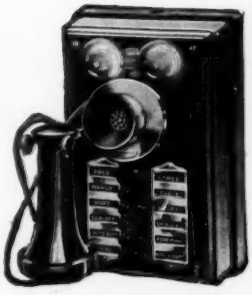
Set for mounting in wall

afford the most satisfactory and economical means of communication between the different parts of the residence, club, factory



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or business establishment; between house and garage and the many other places for private telephone service.

Inter-phones are manufactured only by the Western Electric Company, the oldest and largest telephone manufacturing concern in the world. They are made in various types and capacities, and can be completely installed at a very reasonable cost.

Bulletin No. 2762, giving diagrams, drawings, specifications, should be in your hands. You will find it of real value. Write our nearest house today for a copy.

**The Western Electric Company Furnishes Equipment for Every Electrical Need**

"EVERY BELL TELEPHONE IS"

"SAVE TIME AND FREIGHT"

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"TELEPHONE OUR NEAREST HOUSE"

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as advertised on following pages, is used in our stock columns which are shipped "in white."

**OF ANY WOOD**
**EXTERIOR and INTERIOR**

*What Makes a Good Column?*

DRY LUMBER, Good Glue, Good Workmanship and *not* the Style of Joint.

*Our Columns are Standards of Quality*

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**VERANDA COLUMNS and VERANDA WORK**

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**WRITE FOR CATALOG**

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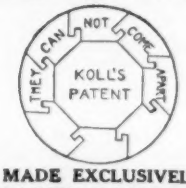
## Koll's Patent Lock Joint Columns

**Suitable for Pergolas, Porches or Interior Use**

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Send for Catalogue R40 of columns, R29 of sundials pedestals, and R27 of pergolas.

*See "Sweet's"*

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## (Moving Stairways)

WE call attention to the Escalator installation in the new Pennsylvania Terminal.

This modern equipment effectually solves the problem of elevating large numbers of people from lower to upper levels. The Escalator has a capacity of continuously elevating Twelve Thousand persons per hour, safely, conveniently and without crowding.

The rapidly growing demand for Escalators is one of the most interesting phases of transportation development today, promising for this safe and practical equipment a place of first importance among historic public utility inventions.

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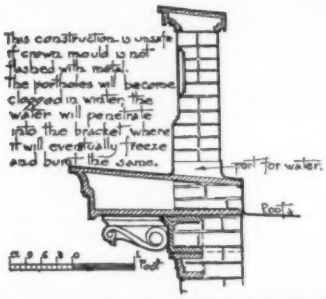
## OTIS ELEVATOR COMPANY
### 17 Battery Place, New York

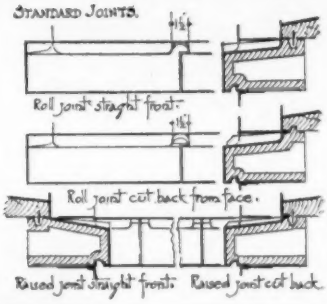
OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD

# HOW TO DETAIL TERRA COTTA




Fifty other examples of good and bad terra cotta construction will be found on pages 131–137 Sweet's Index Any architect's office

THE NORTHWESTERN TERRA COTTA COMPANY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Roll joint straight front.
Roll joint cut back from face.
Raised joint straight front.
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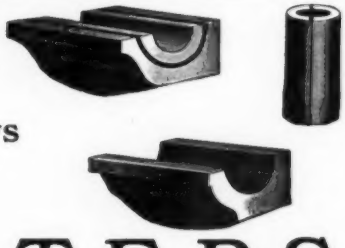
**ATLAS ROOFING CO., Newburgh, N. Y.**
The "Quality Roofers"

# CYPRESS



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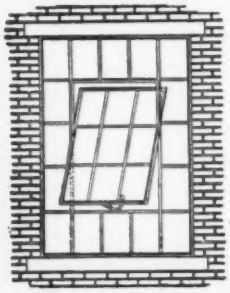


PATENTED.

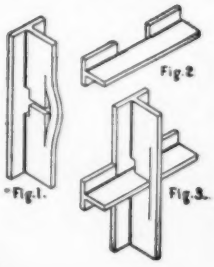
Daylight plentiful wherever our Steel Sash is employed.

**SIMPLE—LIGHT IN WEIGHT.**

The most rigid construction on the market.

Fig. 1 shows vertical bar. Fig. 2 shows cross bar.
Fig. 3 shows cross bar slipped through vertical bar.

*Write for Catalogue 20.*

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## Richard's Royal Ball Bearing Door Hanger

## *Free to Architects*

We will send free, by prepaid express, any one of our Royal Ball Bearing Trolley House Door Hangers (not a small model, but the thing itself), to any architect who will look up our line on pages 588-590 of "Sweet's." Only by having one of these hangers actually in his possession may the architect prove to his own satisfaction how unexcelled they are.

Our new Catalog No. 10, compiled especially for architects, will be sent free upon request.

**The RICHARDS MANUFACTURING CO. Inc.**
**Aurora, Illinois. 101 Reade St. N.Y.**

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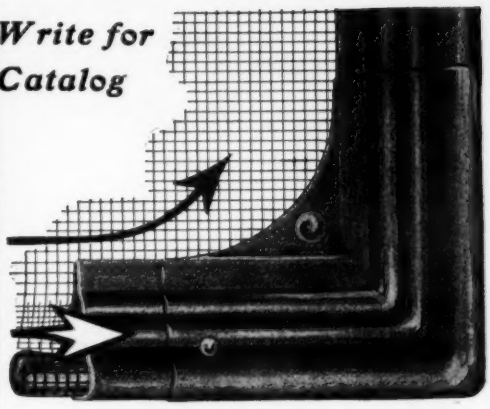

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FRAMES of *steel* or *copper*. Only $\frac{3}{16}$ inch thick. Enamel or dull finish. Trim, neat, inconspicuous, *beautiful!* Channels metal too. *Nothing* to warp, split, swell, shrink, or rot. *No cause* for sticking. Screens fit perfectly *always*.

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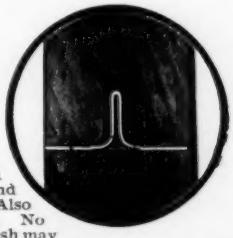

FITS *into* the sash—not against it. Parts around window and window frame *dovetail*. Also those between the two sashes. No matter how window frame and sash may change afterwards through warping or shrinking, weather strip remains *air-tight*. *Never* wears through because edges of metal *don't touch*. One part is zinc; other bronze. No friction. Window slides in rounded metal part; not in tight angle. Never sticks. Write for circular.

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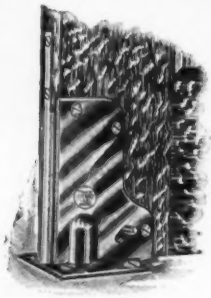

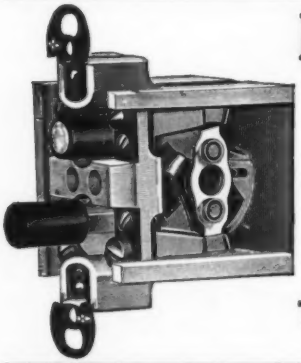

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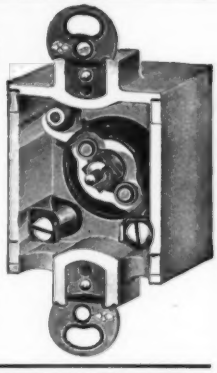

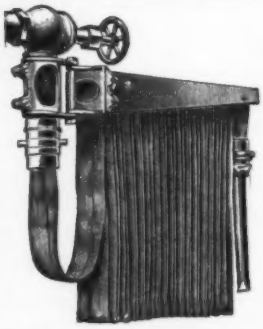

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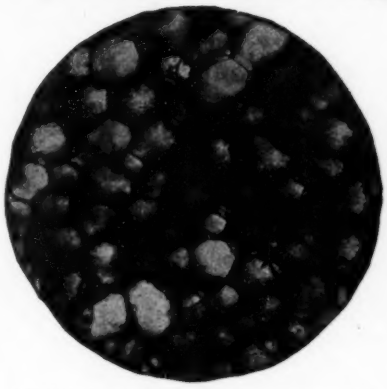
*Do you realize its importance?*



Nonpareil Corkboard under microscope, showing sealed air cells.

Good insulation will keep your ice bills down. Fine hardware and beautiful cabinet work won't.

Better cut some of that out, if necessary, and get a plainer box insulated throughout with two or three inches of

## Nonpareil Corkboard

It costs a little more than makeshift insulation—air-spaces, mineral wool, charcoal, paper, etc.

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Guaranteed to be strictly unfading.

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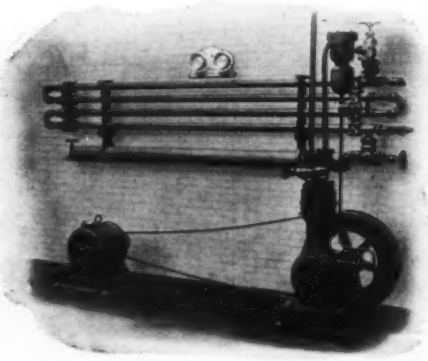


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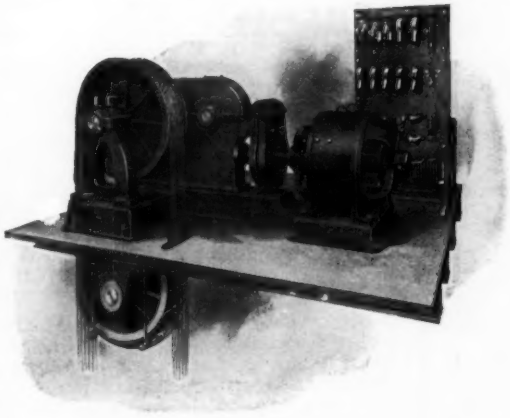

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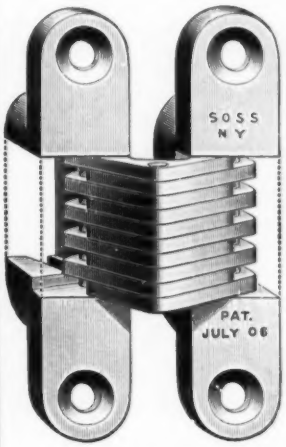


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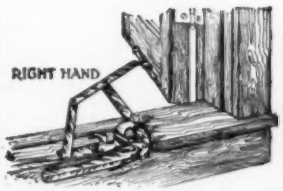


*Note that Sperry Casement Window Adjuster is concealed under the stool of the window—works without raising the screen—no part protruding in the room when not in use.*

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The children safely operate the Sperry.

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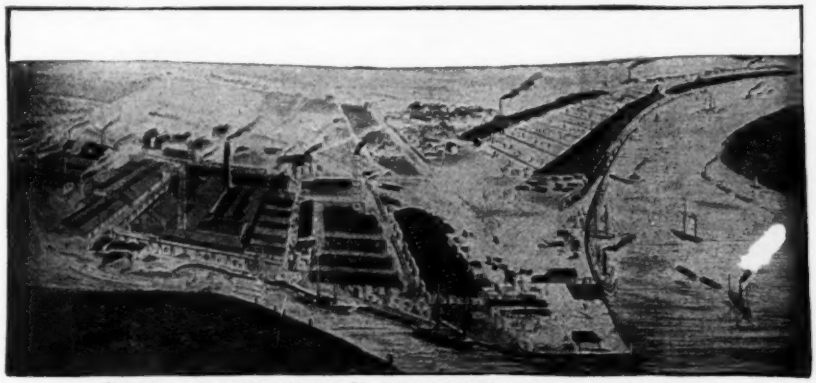

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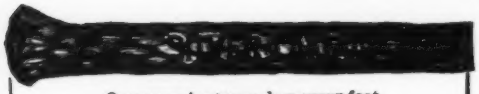

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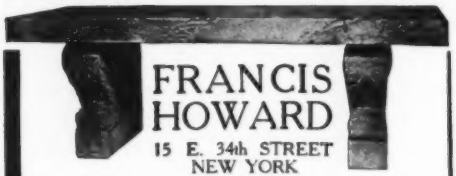

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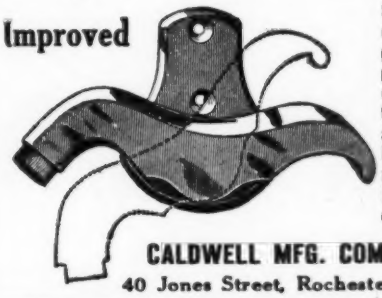

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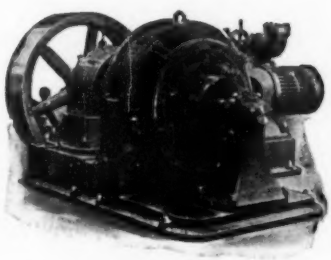

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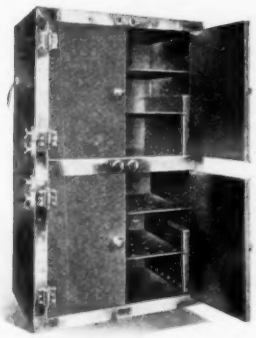

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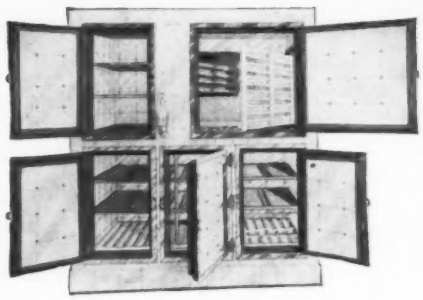

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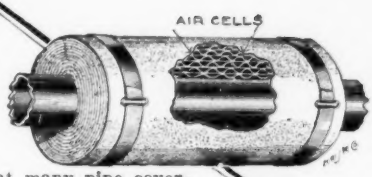


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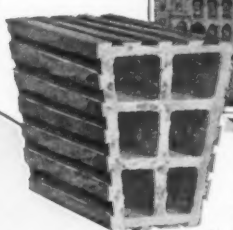

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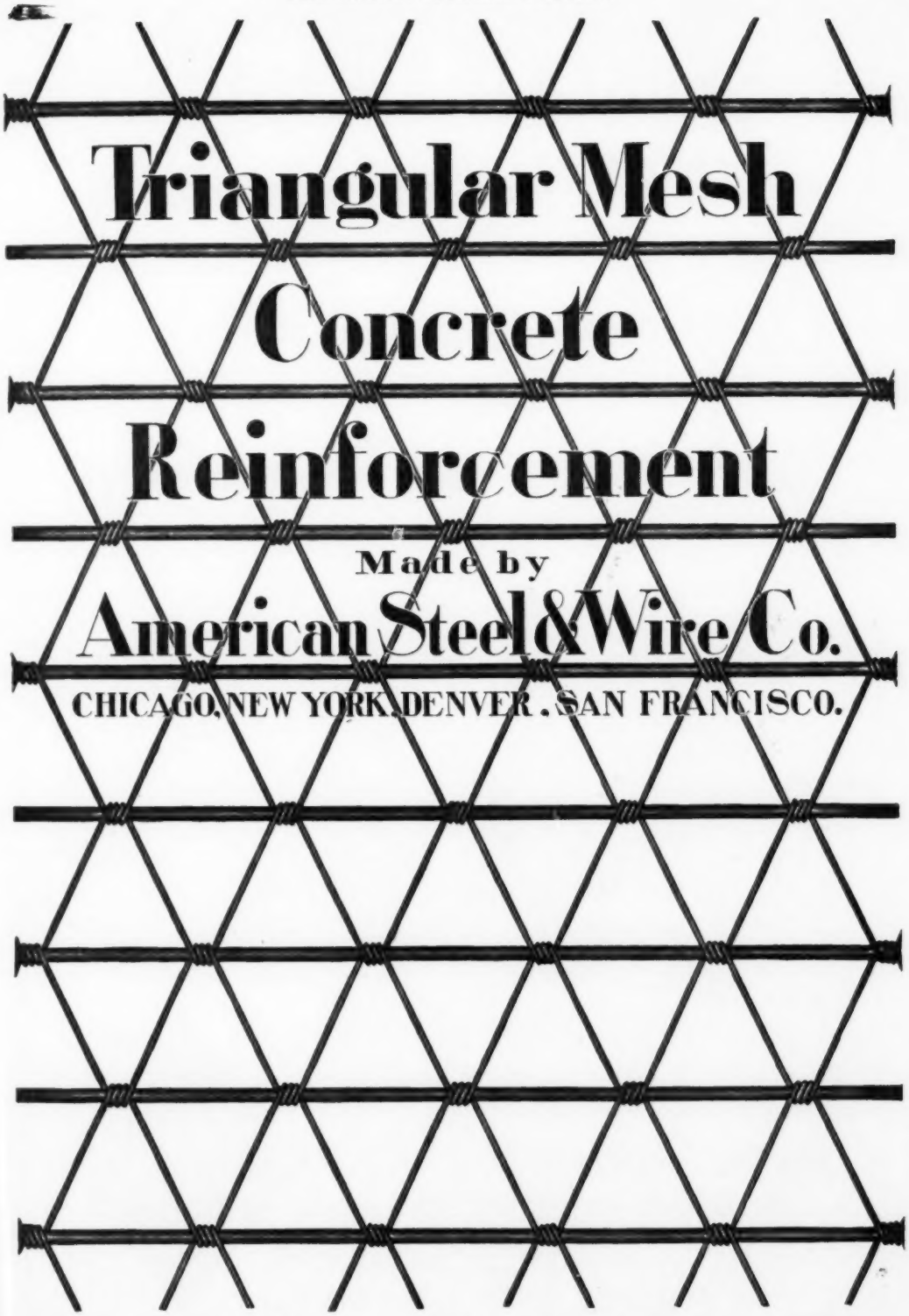


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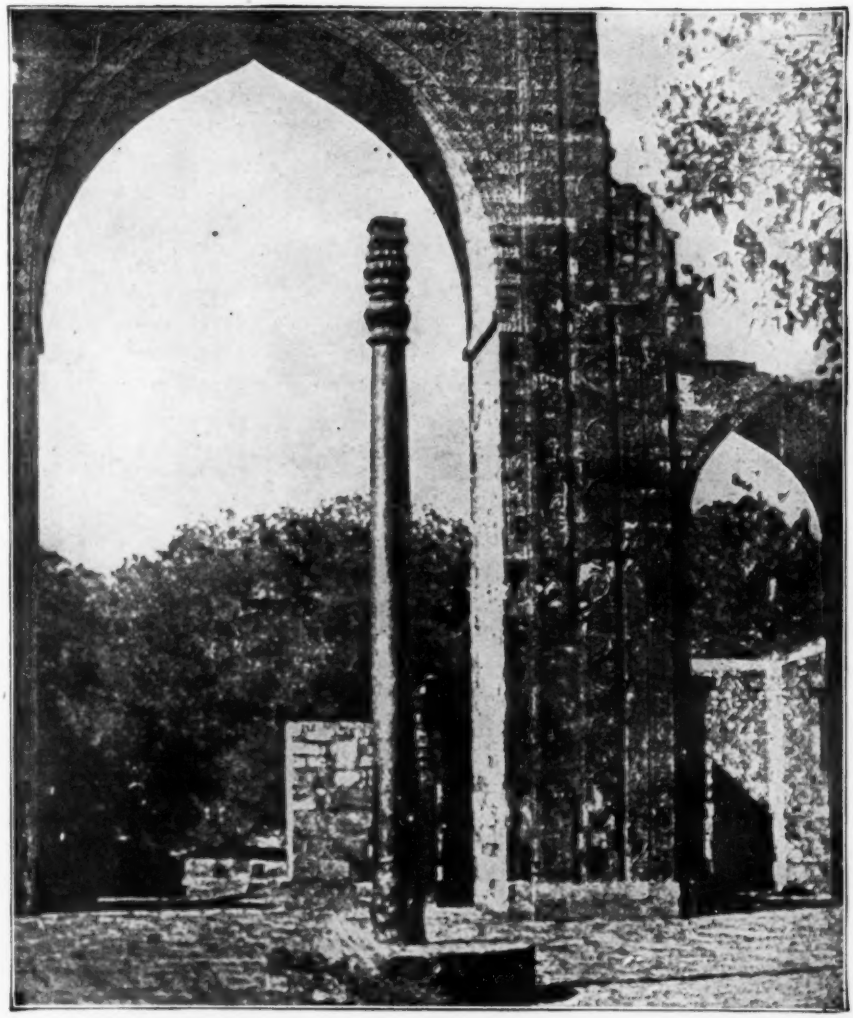

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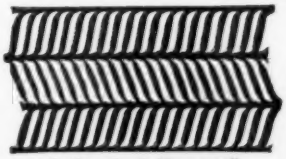

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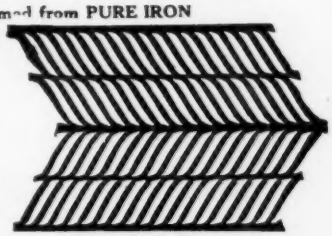

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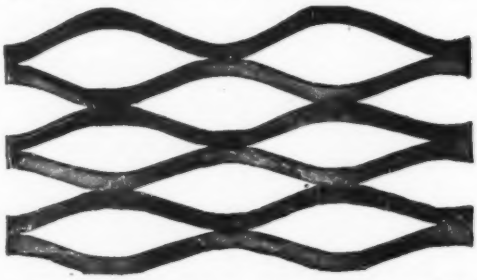

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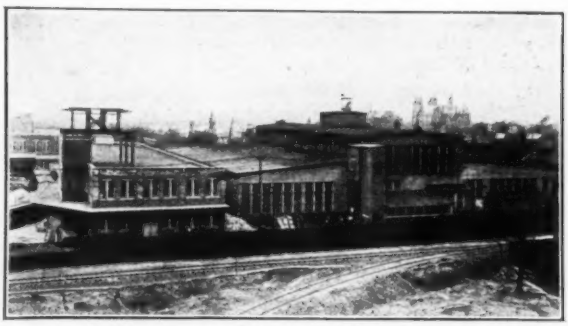

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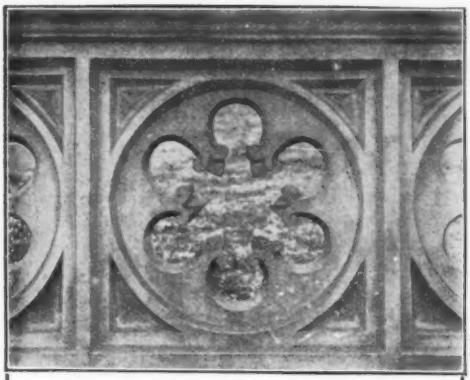

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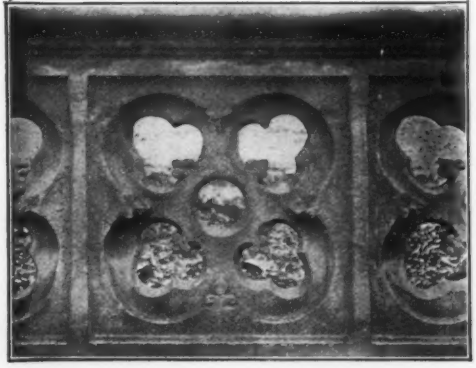

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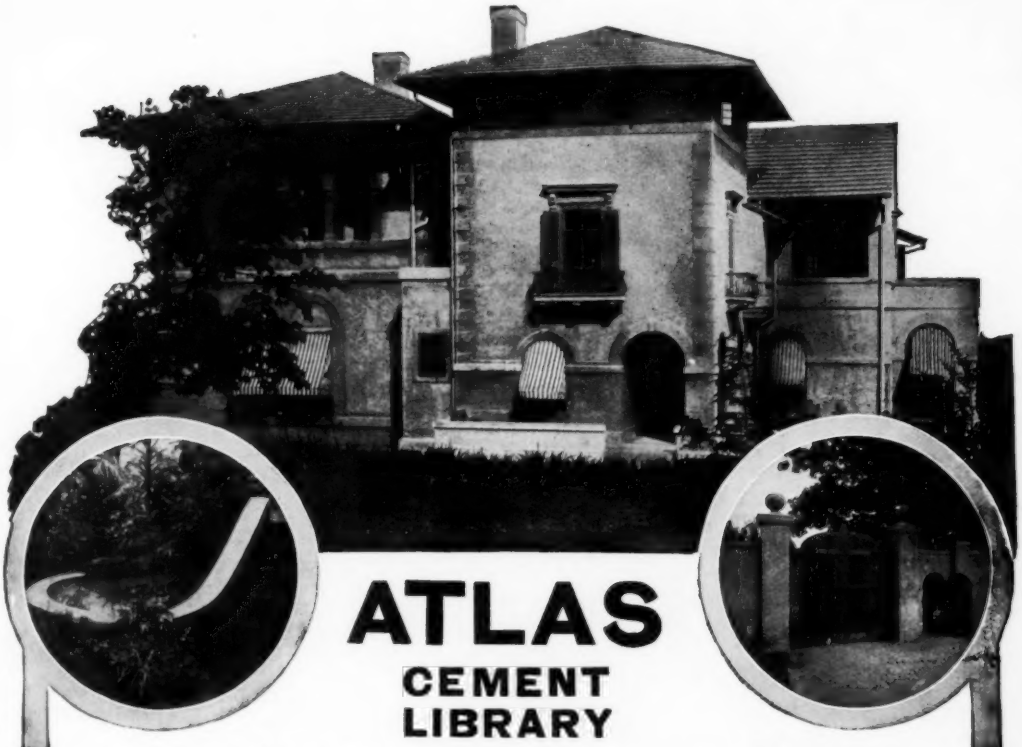

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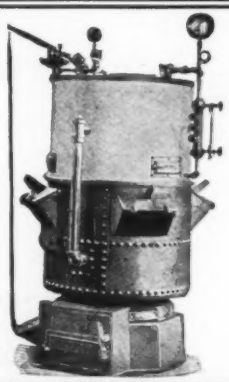

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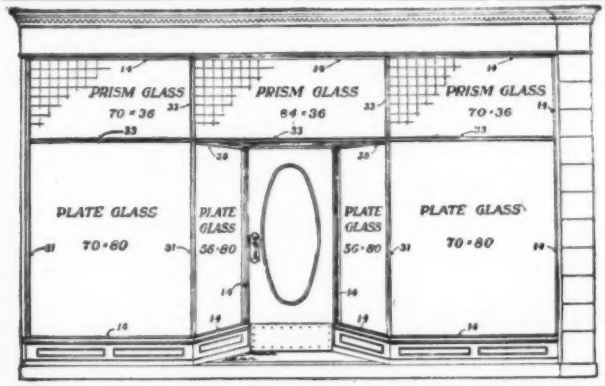
*Our new catalog with guaranteed ratings is yours for the asking. Send for a copy and investigate for yourself.*

**GORTON & LIDGERWOOD COMPANY**
**96 Liberty Street, New York**
**BOSTON: 77 Oliver Street** **CHICAGO: Fisher Building**

PERFECT
# VENTILATION
WITHOUT DRAFT
# IN COLLEGES

**THE LOUVER VENTILATOR is peculiarly adapted for Dormitories and Class Rooms, as it obstructs no light. For particulars and estimates apply**

**LOUVER VENTILATOR CO.,** 112 WATER STREET BOSTON, MASS.

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"Modern Store Front Construction" tells about the best form of this construction—the Petz System. Gives illustrations of various kinds of store fronts and descriptions of Petz Corner Posts and Transom Bars; shows how easy they are to install, how artistic in appearance, and how reliable.

Petz Bars are endorsed by insurance companies—and they know. Pay you to take advantage of their experience. Anyway, let us send you the booklet.

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Sole Makers
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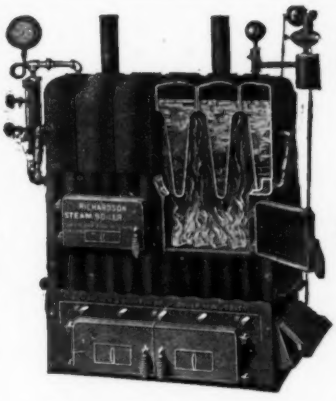
**Is the Best for High Class Engineering Work**

**MANUFACTURED BY**

## Lehigh Portland Cement Company

**WESTERN OFFICE:**
**725 Rockefeller Bldg., Cleveland, Ohio**

**ALLENTOWN, PENNA.**

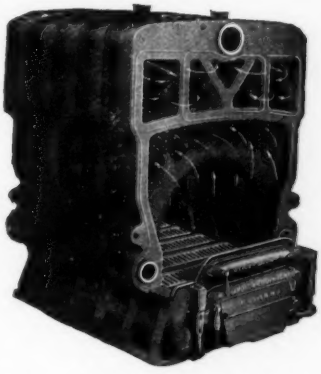


# Richardson's Boilers

FOR

STEAM or WATER HEATING

Have a Deserved Reputation



They supply the desired warmth in cold weather—are economical in fuel—are easily managed and give universal satisfaction—are specified by all leading architects.

*CORRESPONDENCE SOLICITED*

## RICHARDSON & BOYNTON CO., *Mfrs.*

(Established 1837)

*CHICAGO* *31 W. 31st Street, NEW YORK* *BOSTON*

# EFFICIENCY (Direct Fuel to Air)

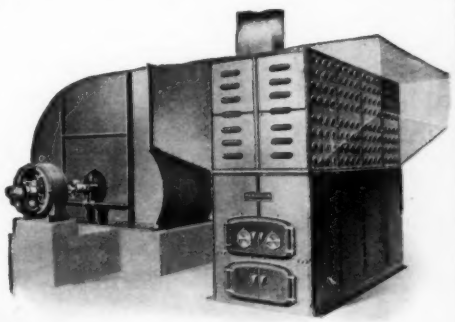
**88% Test Results**
**80% Guaranteed**

THE

# HARRISON

# AERTUBE

# Heating System



**Being the latest modern improvement for adaptation in factories, shops, hospitals, schools, churches, loft buildings, garages, car barns, bank buildings, office buildings, theatres, residences, etc., etc.**

**SOME DECIDED ADVANTAGES:**

Much lower first cost.
Positive ventilation combined with heating.
Practically no cost of maintenance or repairs.
Acme of simplicity, silent operation.
No licensed engineer required.
Absolute safety—cannot freeze up or explode.
Requires no boilers, pumps, tanks, governors, traps, or other auxiliary steam or water apparatus.
No valves to pack, gaskets to replace or steam or water piping to maintain.
Utilization of waste heat from furnaces or exhaust of gas engines, where available.

**Test records, printed matter, testimonials and list of installations on request**

## HARRISON ENGINEERING COMPANY

**BOSTON**
**112 Water Street**

**42 East 23d Street**
**NEW YORK**

**CHICAGO**
**1109 Fisher Bldg.**

# The Sentinel of Winter Time

"On Guard"—night as well as day—preserving your comfort and happiness, your health *and perhaps your life*—the good old Kewanee Fire-Box Boiler is performing a mission for humanity that is making it *loved by everybody*. You wouldn't think, would you, that a thing that is as unro-

mantic and unpicturesque as a steel heating boiler would arouse the affection of human beings? *Yet here you have it.*

This spring one gentleman, who has a family of little ones, exclaimed, with glowing eyes and unmistakable warmth: "By Jove, I actually don't know what we would have done this past winter if we hadn't had the Kewanee Boiler under us." *These are the heartfelt comments that take this boiler out of the ordinary and put it in a class by itself.* Have you ever in your life heard such a thing said of any other boiler in the world? *Bet you ten to one you haven't.*

Ask any flat owner whose building is heated by the all-steel Kewanee Fire-Box Boiler, and if he believes that "truth is mighty and will prevail," he will tell you that this boiler established—and maintains—*the renting value of his property.* Some of these days, neighbor, you can't rent a flat in this city unless that boiler is under it. *Coming just as sure as the end of your earthly career.*

**Did you ever meet The Old Man Behind the Boiler? Jolly old soul. Knows heating boilers backwards. Loves to talk about them. And what is more important to the human family than knowledge of heating the home? Let the old man spiel for half an hour. Give him your finest ear.**

# KEWANEE BOILER COMPANY

MAKERS OF

**BRICK-SET STEEL FIRE-BOX BOILERS, RADIATORS, TANKS AND STODDARD-KEWANEE GARBAGE BURNERS**

## Kewanee, Illinois

**Branches: Chicago, St. Louis and Kansas City**

Cochrane Agency, Chi. **Chicago Office: 35 MICHIGAN AVE.**

# To the Manufacturer

who was not represented in the 1911 edition of "SWEET'S" Catalogue we would like to say:

**"SWEET'S"** will increase the efficiency of your Sales Department.

**"SWEET'S"** enables your goods to be illustrated and described in the offices of all Architects, Contractors and Engineers when they are specifying or purchasing building material.

**"SWEET'S"** contains the catalogues of the leading manufacturers of the United States in all the various lines of building material.

**"SWEET'S"** covers the entire purchasing power in the field of building material.

Ten thousand Architects, Building Contractors, Engineers, etc., are using **"SWEET'S"** to-day when they want information about building material.

Over $100,000,000.00 worth of material was specified and purchased directly from **"SWEET'S"** last year.

If you wish *your* share of this business, arrange now for representation in our next issue—a postal asking for particulars is enough.

## "Sweet's"

11 East Twenty-fourth Street, New York

Chicago Philadelphia Pittsburgh Boston

# "Cleveland" Flush Meter

SIMPLE
ECONOMICAL
DURABLE

*Easily Adjusted*
*Easy to Operate*

Valves easily adjusted to any pressure, or for any required amount of water

The "Cleveland" Valves have no leather cups, packing rings, or diaphragms to wear out

Only one moving part, which is the most perfect floating valve ever invented

Sold with lever action or press button

**Cleveland Flush Meter Co., Cleveland, O.**

# A "PIERCE" Boiler

*pays for itself by saving fuel and repairs*

Economy in heating is not always realized in burning cheap coal unless you have the kind of a heater that will burn less than any other.

## "PIERCE"

### Steam or Hot Water Boilers

have stood the test of over 30 years. They burn any kind of fuel and get the most out of it. They last as long as your building stands. Write for catalogs.

**PIERCE, BUTLER & PIERCE MFG. CO.**
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936 Arch St.

# KITCHEN SPACESAVER

**400 Ordered for the Shively Sanitary Tenements**

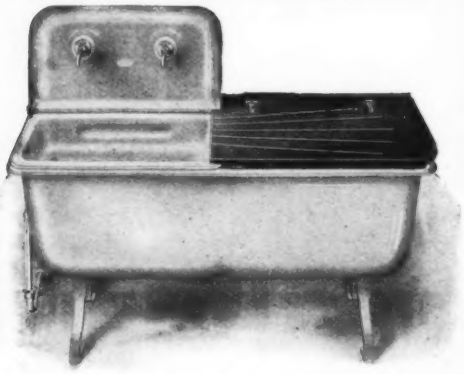


**Plate No. 202, 26x48 in. Sink and Drainboard in Use.**

**SAVES**

- From 4 to 33 square feet of floor space.
- From two to four lines of pipe, one trap, and in some cases two traps and two vents.
- Many hours of labor and plumbing material.
- Plumbers' repair bills, no sinks to stop up.

The only Sanitary Sink in existence. May be cleaned by lifting the Sink. No Sink water can enter tubs from Sink, a separate outlet being provided.

CATALOGUE E ON REQUEST

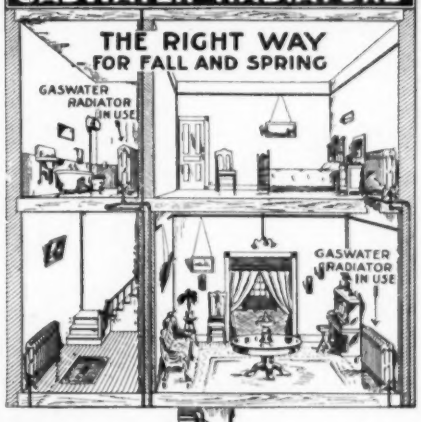
**SPACESAVING APPLIANCE CO.**

**135-139 West 20th Street**
**New York City**

**Plate No. 202. Laundry Tubs in Use.**



**CLOW GASTEAM AND GASWATER RADIATORS**




**Clow Gaswater and Gasteam Radiators**

when made part of an ordinary steam or water plant can be used independently with gas—

Hence Great Fuel Economy

In Fall and Spring, why waste Coal to heattworoom? Install CLOW

Combination Gaswater and Gasteam Radiator in bath room and sitting room.

A match transforms it into an independent heater

Send for Booklet "L"

**James B. Clow & Sons**
Chicago

**The D. A. Ebinger Sanitary Mfg. Co.**

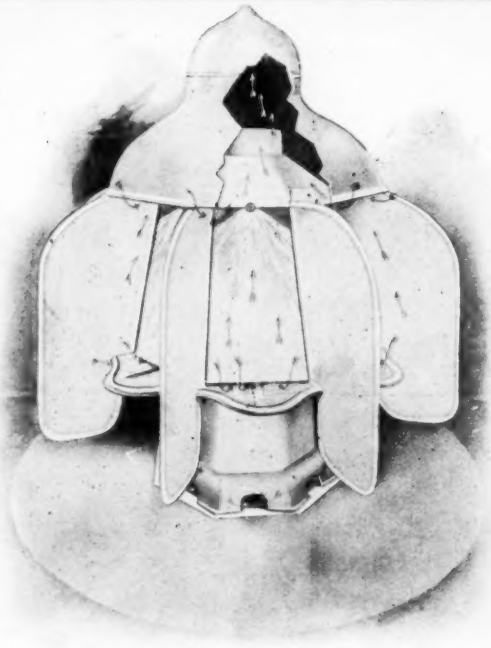
Manufacturers of Sanitary Ventilated Appliances
SANITARY & VENTILATING ENGINEERS

COLUMBUS, OHIO

ABSOLUTELY SANITARY URINALS AND CLOSETS

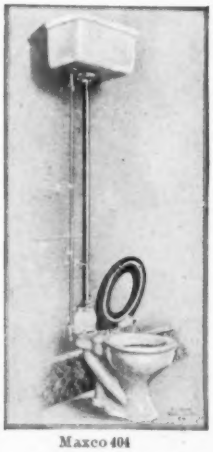
This urinal is absolutely sanitary, is not complicated and is easy for plumbers to install. It thoroughly ventilates itself as well as the entire toilet room, all odors being carried out, none escaping into the building. The ventilation takes place at three points in each stall, at the base or floor line, at basin in center into which the water flows and at top into the hood, connected with vent stack. No toilet room in any public building is complete without it.

Information and prices upon request
The D. A. Ebinger Sanitary Mfg. Co.
COLUMBUS, OHIO



"Columbus" Octagon Ventilated Urinal

PERFECTLY ODORLESS



Maxco 404

# From Coast to Coast

*From Portland to Portland*

MAXCO Automatic Closets are installed in Schools, Hotels, Factories, Hospitals, etc. throughout the entire United States.

The big railroads install MAXCO Closets, even in small, out-of-the-way stations where no other closets have previously given satisfaction. Do not allow the "just as good" fellow to prejudice you. Investigate! *Get Catalog J.*

CLIMAX SANITARY CO. 340 GUOIN STREET DETROIT, MICH.

# JENKINS BROS. VALVES

*Globe*
*Angle*
*Check*
*Safety*
*Blow-off*

The most practical and economical. Each and every component part is designed to meet the requirements of exacting every-day service. In metal and in workmanship care is taken to produce a valve that will give maximum amount of strength and durability.
We shall be glad to mail catalogue on request.

**JENKINS BROS., New York, Boston, Philadelphia, Chicago**

**GLAUBER BRASS MFG. CO.**

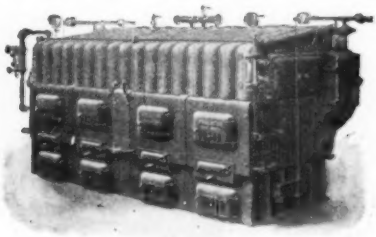
**CLEVELAND AND NEW YORK**

**Two boilers in one. By closing two cut-off valves, each half may be economically operated independent of the other**

# THATCHER
## "PROGRESS" BOILER

**For Churches, Schools, Armories and Assembly Halls generally**

Wonderful Efficiency  Surprising Economy



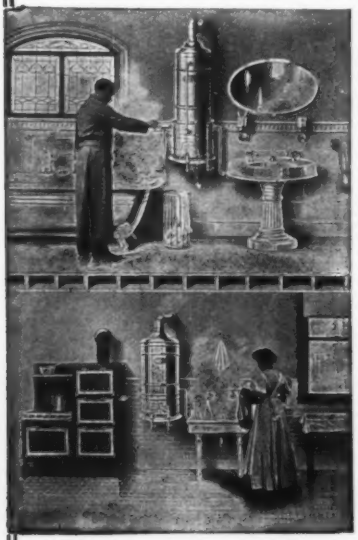
THATCHER FURNACE CO.

**154 Lake St., Chicago  110-116 Beekman St., New York**

***Investigate!***

## HOT WATER INSTANTLY

The cheapest in the world. Is as ready as cold and almost as cheap, if you use a Humphrey Instantaneous Gas Water Heater. Always ready. No dust, dirt, ashes or labor. Save cost in fuel in two years in the average home.



**Positively Guaranteed.**

Send for catalogue and information to

**HUMPHREY COMPANY**

**539 Rose Street - Kalamazoo, Mich.**

## The "Onliwon"
## TOILET PAPER CABINET

Delivers units of two sheets uniformly, invariably and *silently* eliminating the waste and litter incident to the unprotected roll or cabinet. Nickel plated steel *locked* cabinets for hotels or other public places. Handsomely ornamental metal for residential use.

Booklet showing SPECIAL DESIGNS FOR NEW CONSTRUCTION will be sent architects or others on application.

**A. P. W. Paper Co., Albany, N. Y.**

# Architects, Attention

**Plate G-194.** (Patent applied for)

HERE is something you have been looking for a long time, a combination lavatory and dental basin cast integral. Absolutely new and unique, and a fixture that will fill a long felt want. Furnished with special fittings, as shown, which include bi-transit waste, three four-arm china handle and china index compression cocks, supply pipes with wheel handles, flask trap, special waste connection, and flushing fixture for dental basin.

| DIMENSIONS | | LIST | |
|---|---|---|---|
| Slab | 20 x 27″ | Enameled inside, less fittings | $26.50 |
| Height of Back | 10″ | Enameled all over, less fittings | 28.50 |
| Depth of Apron | 5″ | Fittings as shown and described, complete | 27.50 |
| Lavatory Bowl | 12 x 14″ | If trap is not wanted, deduct | 5.00 |
| Dental Bowl | 7½″ | | |

*Note*—With the exception of the trap, all the above fittings are made especially for this lavatory and must be furnished. This fixture is fitted up, water turned on, and all fittings are carefully tested before shipment.

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*Ask a party that knows something about Plumbing Goods what he thinks of*

# "Paragon Quality" Plumbing Appliances

*The chances are he will say the quality of the line is unquestioned, but a little higher than other goods*

*Cost a little more. We know that the difference is small and well worth the extra amount asked. Besides, all "Paragon" Trimmings bear our name, which is a guarantee to every purchaser.*

**THE SANITARY CO., Cleveland, Ohio, U.S.A.**

**Exclusive Makers of "PARAGON QUALITY" Plumbing Goods**

**Mueller Colonial Self-Closing Basin Cock**

# Man Forgets It's Natural

(Patented)

But a mechanical device never forgets. It can't. A man will draw a glass of water, leave the faucet open and waste a barrelful, unless the faucet is a

## Mueller Colonial Self-Closing

It can't be left open. The instant the handle is released it closes, and no water is wasted. Mueller Colonial Self-Closing Work is equal to or *better* than anything on the market. Every piece is tested 200 pounds hydraulic pressure and Unconditionally Guaranteed.

In a continuous run of 466 hours Mueller Colonial Self-Closing Work was opened and closed 699,000 times, water passing through each time without impairing its serviceability. The test was equal to 20 years' actual service.

TRADE MARK
COLONIAL
REGISTERED

## H. Mueller Mfg. Co.

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**Eastern Division**
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**254 Canal St., cor. Lafayette**

# The Seat with the Long Life

## The Strongest Seat Made

EACH AND EVERY SEAT
WE MARKET IS FITTED
WITH TWO 3/8 in. x 8 in.
LONG STEEL DOWELS

## PEERLESS SELLING COMPANY

EVANSVILLE, INDIANA

Manufacturers of a Full Line of Wood and China Water Closet Combinations and Sanitary Earthenware

# The Latest in Bathroom Fittings

The illustration shows an interior view of a bathroom in the fine Blackstone Hotel, in Chicago.

The closet seat and lid are attached to the chair-frame, which fits over and practically conceals the bowl.

Seats of superior qualities were necessary to harmonize with the luxurious yet substantial surroundings. The architects selected

The bathroom chair used in the Blackstone Hotel—the latest addition to America's magnificent hotels.

## The "NEVER SPLIT"

**"The seat with the bolted joints"**

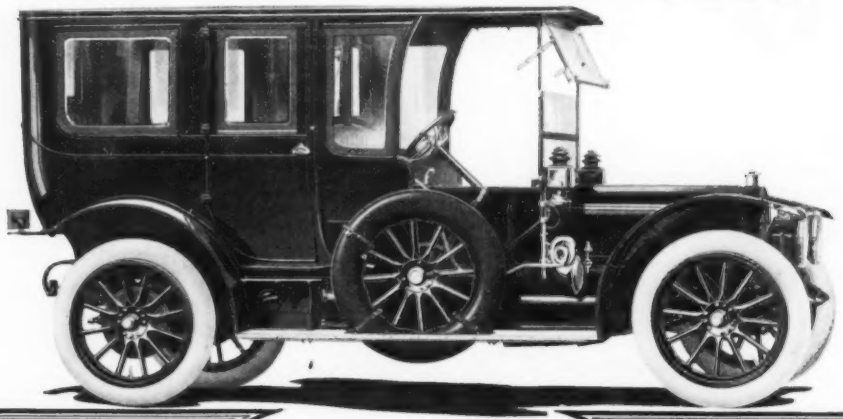
The seat that is finished like a piano—the seat we guarantee for five years.

You can make good profits on this seat, and we help you to sell it.

Write for our sales proposition and Catalogue.

NEVER SPLIT SEAT CO.
EVANSVILLE. IND., U.S.A.

# Rambler Closed Cars



Rambler
Sixty-five
Limousine

RAMBLER closed cars justly deserve distinction because of the attention given to little things. The seats are low enough for the comfort of any person, wide enough to seat three with wraps, without crowding, and deep enough for gratifying ease. The curtains are of heavy brocaded silk, pantasote lined, with Pullman car fixtures. The ceiling, sides, window and door sashes of the limousine and coupe are of mahogany, highly polished. The limousine appointments include two electric dome lights, electric cigar lighter, bouquet holder, silk hat and parcel rack, umbrella holder, toilet case, card and cigar cases, clock, stationary mirror, whisk broom and holder and megaphone signal.

You may inspect the limousine, landaulet, coupe or town car at the Rambler branches and at dealers' stores in principal cities.

**The Thomas B. Jeffery Company**
Main Office and Factory, Kenosha, Wisconsin
Branches: Boston, Chicago, Milwaukee, Cleveland, San Francisco

New York Dealers: The Rambler Automobile Co. of New York, 38-40 West 62nd Street, New York

# Put the WHEELING CLEANOUT closet in your plans when you build

Foolish persons WILL throw into closet bowls things that WON'T flush through a trap. Result: The clogged trap, a nuisance to plumbers, property owners and tenants.

We have invented a sectional water-sealed trap that can't stay clogged longer than the minute it takes to lift out one section and remove the obstruction.

## The WHEELING CLEANOUT

### The Closet with the Removable Trap

is the same as an ordinary syphon jet—EXCEPT—

That the trap is in two sections. The upper section fits loosely into the lower. It is kept air-tight and water-tight at all times by the water seal. The upper section ends in a lid just back of the bowl. To lift it out and lay bare the entire interior of the trap is almost as easy as lifting the lid of a sugar bowl. Any woman or any man can do it—without the use of either plumber or plumber's tools.

If there's anything that people want when they want it, it's a closet. When they want a closet they don't want a plumber. To want at once a closet and a plumber is a woeful want indeed.

Sectional view, trap in place.

The WHEELING CLEANOUT Sanitary Closet solves the problem. Here's how: The trap gets clogged. Simply lift the upper section out with your hands. The whole interior is thus exposed. It is the work of a moment to remove the impediment. Replace the lid. The incident is closed, and there has been no cash outlay. The closet is back on the job. Everybody is happy.

Now, Mr. Architect, all we ask is that you investigate this closet. If it is good, we know it will receive your approval as a new convenience, and a new economy in plumbing construction. If not, it will receive your merited condemnation.

For further information, roughing in dimensions, see an up-to-date jobber. If you find one who hasn't it, send us his name.

**Wheeling Sanitary Manufacturing Company**
**WHEELING, WEST VIRGINIA**

Manufacturers of a full line of **Plumbers' Earthenware, Solid Porcelain** and **Enameled Iron Ware.** Catalog out about December 1st.

# WOLFF PLUMBING GOODS

The New Northwestern Passenger Terminal Station, Chicago

Frost & Granger, Architects, Chicago — Geo. A. Fuller Company, Builders

ALL the Plumbing Fixtures in this building were manufactured and furnished by us

## L. Wolff Manufacturing Company

**Established 1855**

**Manufacturers of Plumbing Goods Exclusively**

The only complete line made by any one firm

**General Offices: 601 to 627 West Lake Street, Chicago**

**DENVER** — **Showrooms, 91 Dearborn St., Chicago** — **TRENTON**

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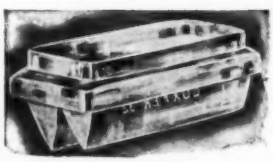
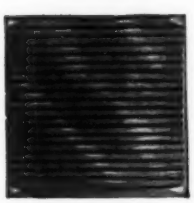
**Cleveland, O.**, Builders' Exchange
**Buffalo, N. Y.**, 61 Manchester Pl.
**Omaha, Neb.**, 1116-1118 Douglas St.
**Minneapolis, Minn.**, 615 Northwest'n Bldg.
**Kansas City, Mo.**, 1204 Scarrett Bldg.
**San Francisco, Cal.**, Monadnock Bldg.
**Washington, D. C.**, 327 Bond Building

# Luxfer

## *Substitution*





We started the business of "DAYLIGHTING" by the use and adjustment of prismatic glass many years ago, and have naturally had imitators.

No one has ever been able to make an imitation diamond which would fool anybody capable of knowing and appreciating the qualities of a real diamond, and no concern has ever been successfully able to imitate the LUXFER SYSTEM.

If you want LUXFER results you will have to insist on LUXFER.

See "Sweet's" 1910 edition for our products.

AMERICAN Luxfer Prism COMPANY

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BOSTON, 49 Federal Street
CLEVELAND, 406 Garfield Building
CINCINNATI, Builders' Exch., Box 5
DULUTH, 106 W. Michigan St.
INDIANAPOLIS, 7 E. Market St.
KANSAS CITY, 948 N. Y. Life Bldg.
MILWAUKEE, 1300 Majestic Bldg.
NEW YORK, 507 W. Broadway
NEW ORLEANS, 904 Hennen Bldg.
PITTSBURGH, 1022 Fulton Bldg.
PHILADELPHIA, 807 Chestnut St.
ROCHESTER, 38 Exchange St.
ST. PAUL, 615 Ryan Building
SAN FRANCISCO, 151 Tehama St.
DALLAS, Builders' Exchange

# CORK TILING—*The* IDEAL FLOOR

ALLEGHENY COUNTY SOLDIERS' MEMORIAL, PITTSBURGH, PA.

THE aisles and stairs of the auditorium in this monumental building are laid with CORK TILE. This is the most durable, silent, sanitary and architectural flooring material for the aisles of Churches, Theatres, Auditoriums and Assembly Halls.

**EXTRAORDINARILY DURABLE**
**NOISELESS AS VELVET CARPET**
**ARCHITECTURAL IN APPEARANCE**
**NON-INFLAMMABLE AND NON-SLIPPERY**
**NON-ABSORBENT AND ODORLESS**
**IMPERVIOUS TO GREASE AND CHEMICALS**
**CLEANER AND MORE SANITARY THAN TILE**
**REQUIRES NO CARE BUT ORDINARY WASHING**

**Absolutely Unaffected by Strains, Dampness or Heat and Cold. Can be Laid on Any Backing**

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Inst. of Musical Art, New York
Penn. R. R. Terminal, New York
Union Station, Baltimore, Md.
Johns-Hopkins Hospital, Baltimore
University of Michigan, Ann Arbor
Columbia University, New York
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